FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

OHIO STATE UNIVERSITY
AUG 26 1954

AUGUST, 1954

A District Chief Was Killed and Eleven Other Persons Injured at Dayton, Ohio, on July 12, When an Aerial Ladder and the Chief's Car Collided During Response to an Alarm.

A CASE - SHEPPERD - MANN PUBLICATION

Swimming is great . . . but

are you ready

with the most effective artificial respiration known to science?

EMERSON Resuscitators

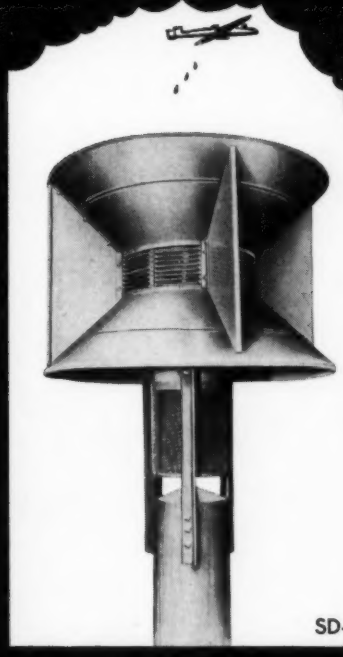
"Simplest and Safest"

J. H. EMERSON CO.

[illegible] COTTAGE PARK AVE., CAMBRIDGE 40, MASS.

or

CIVIL DEFENSE



A *better* siren is now available. The FEDERAL STL-10 with its special, penetrating low tone, and no additional power consumption can do what many existing sirens are failing to do.

No one siren can do what should be done by two or more sirens. No one siren will necessarily project sound into areas from which the sound is blocked with an existing siren.

The STL-10 siren can put more force and energy where your present siren *is* heard. Surprisingly enough it may even penetrate into areas not heretofore covered.

We claim no miracles for *any* audible signal. The STL-10 is a *better* siren!

Wherever it has been installed it has done a better job. Its scientific construction takes advantage of every physical factor to improve sound generation and distribution. For CD application the same type of siren with the double tone feature (designated as the SD-10) is also available at the same price. Don't wait for bad weather to replace your siren or supplement a siren which proved inadequate *last* winter.

Write Now **for full particulars about FEDERAL fire alarm sirens and ask for bulletin 200**

FEDERAL SIGN and SIGNAL Corporation

formerly: Federal Enterprises, Inc.

8702 SOUTH STATE STREET CHICAGO 19, ILLINOIS

FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING, THE FIRE ENGINEER, FIRE PROTECTION *and* FIRE SERVICE

FRED SHEPPERD
Editor

ROI B. WOOLLEY
Assistant Editor

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TEAMWORK

"WHAT is the recipe for successful achievement? To my mind there are just four essential ingredients: Choose a career you love . . . Give it the best there is in you . . . Seize your opportunities . . . And be a member of the team."

BENJAMIN F. FAIRLESS

● The business of fire suppression offers real opportunity for the man who likes his job, who recognizes its possibilities, and its hazards—and the importance of working with his fellow firefighters.

● There's ample career for the man who is willing to work, and study and learn—but not at the expense of teamwork. For teamwork is more essential in today's split-second, gruelling and dangerous firefighting than in almost any other occupation.

● The flood of new hazards facing fire forces in this chemical and atomic era—and the general shortage of manpower in the fire fighting and rescue crews on the fire ground, make teamwork more vital than ever.

● FIRE ENGINEERING likes to believe itself a part of the great "team" of fire fighters—*in absentia*, if you please, but always and forever standing shoulder to shoulder with those engaged in advancing the "big business" of fire suppression.

The Publishers

FIRE ENGINEERING

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"*Specialized* Leadership"

FABRILON

WITH DOUBLE-SURFACE JACKETS

DOUBLE-SURFACE MEANS DOUBLE-SERVICE

This is a magnified cross-section cut length wise through a FABRILON hose jacket. The cabled warp strands are shown closely interwoven with FABRILON filler cords in FABRIC's exclusive *twill woven* construction.

For every stitch that is inside there are *two* on the outside, which means that *twice* as much material is on the *outside* of the jacket, producing a smooth, *double-wearing* surface attained only in our *twill woven* FABRIC jackets.

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THE ONLY EXCLUSIVE MANUFACTURER OF FIRE HOSE IN AMERICA

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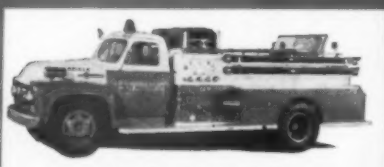

FERNDALE, PENNSYLVANIA

MORNINGSIDE, MARYLAND

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The **TREND**

in Modern Fire Apparatus is to John Bean **HPV** *

Two-Fisted Fire-Fighters

Today's trend in fire fighting is to the double punch — John Bean High-Pressure Fog plus John Bean Volume Power. Communities everywhere are specifying *both* — and are gaining the fool-proof protection afforded by the biggest fire-fighting wallop ever packed into a single unit.

For in-fight and the quick knock-out, there's atomized fog delivered at 600 PSI nozzle pressure by John Bean's High-Pressure Pump. Only true high-pressure fog has effective triple action — to cool, to smother, to isolate. Temperatures drop and flames go out in seconds — with only 10% of the water used with ordinary pressures. Then, for long-range slugging power, there's the John Bean Volume Pump to deliver 500, 600 or 750 GPM, depending on engine horse-power. The two pumps operate separately or simultaneously, from hydrant, straight-draft, or the 500-gallon tank on the truck.

The trend to HPV* is significant *for your community*. Write for the full story today.

*** HPV** - *the fire-fighter with both*

High-Pressure Fog and Volume Pumps

JOHN fmc BEAN

TWO-FISTED FIRE-FIGHTERS

Can be mounted on most standard truck chassis

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San Jose, California

A PRODUCT OF FOOD MACHINERY AND CHEMICAL CORPORATION

RESEARCH KEEPS **B.F.Goodrich** FIRST IN RUBBER

This hose handles easier— on or off the truck

A LIGHT hose is much more than a convenience. It means faster handling when speed is all important in checking a blaze. It means more flexibility when racking hose afterwards.

Weight used to mean strength. But since B. F. Goodrich developed Fire King, there's just no advantage in using stiff, bulky hose. Fire King is 15% lighter, much more flexible than other hose. As a result, it gets into action faster, stays flexible even under top pressures, and cuts loading time because it racks naturally on the truck bed.

It's a chemically-produced fiber that makes Fire King so light and flexible. B. F. Goodrich uses this fiber as "filler" cords—the cords that go around the hose and carry the load under pressure. Compared with cotton filler cords used in other hose, this special fiber has three times the strength for the same weight of cord. So Fire King is stronger, can stand higher pressure. Actual service tests prove that this B. F. Goodrich hose, tested to 600 pounds pressure, is *50% stronger* than standard fire hose which is tested to only 400 pounds.

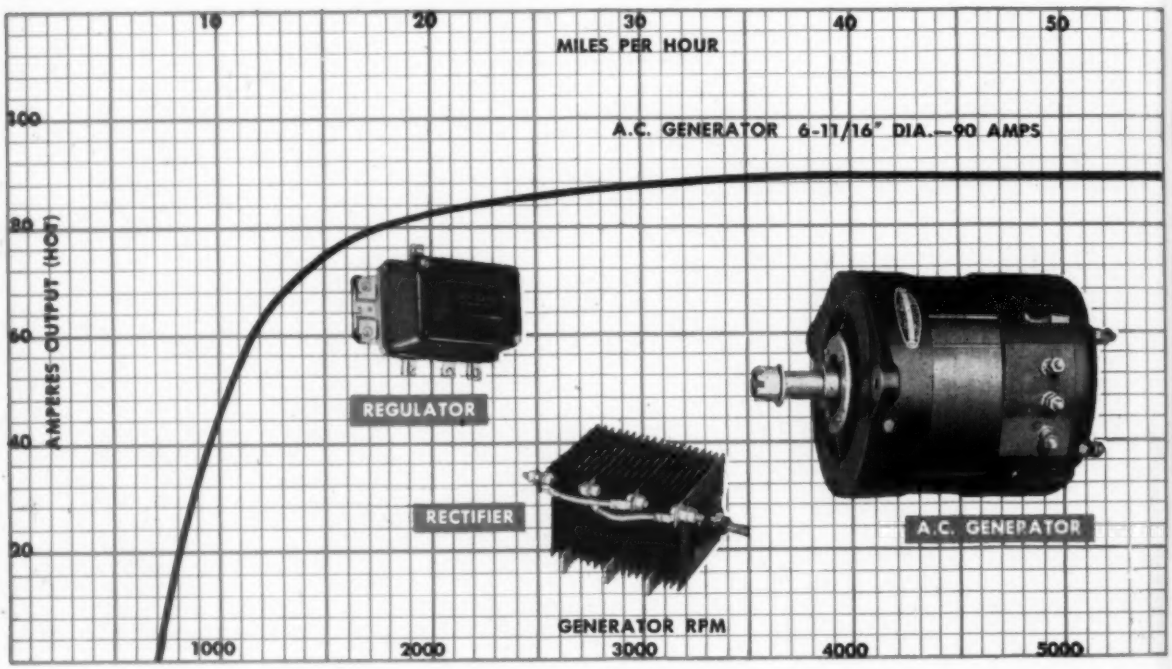
Ease of handling is what sold Chief Harry Barlbort (above, center), of the Spanish Lake (Missouri) Fire Department. He says, "On an alarm, Fire King proves its worth as it's possible to pull the skid with ease—thanks to its light weight."

Next time you need hose, ask your BFG Fire Hose Distributor to show you a sample of Fire King. Compare it with your present hose—for weight, flexibility and strength. Prove to yourself that it's your best hose buy. And remember, while Fire King may cost a little more, it makes up for it by lasting longer. *The B. F. Goodrich Company, Dept. M-307, Akron 18, Ohio.*

B.F.Goodrich
INDUSTRIAL PRODUCTS DIVISION

Power Packed and

HERE'S THE A.C. ANSWER TO EXTRA-HEAVY ELECTRICAL DEMANDS



DELCO-REMY

A. C. Generator, Regulator and Rectifier

Here's the answer for "problem" vehicles—Delco-Remy's new long-lived A.C.-D.C. charging system! It's specifically designed to meet the *extra*-heavy electrical demands of fire engines, police prowl cars, big city taxis—other vehicles equipped with two-way radio, floodlights or any extra electrical units. Ample current reserve picks up discharged battery quickly in operation. Delco-Remy A.C. generators are suitable for use at all engine speeds.

With output ranging from 30-40 amperes at curb idle and up to 90 amperes at higher engine speeds, the new Delco-Remy A.C.-D.C. charging system meets all electrical needs under the toughest operating conditions. Included in the new system is the A.C. generator, a matching regulator, and a rugged, dependable dry-plate rectifier which converts generator A.C. output to direct current.

Application packages complete with installation instruction sheets for popular makes of cars and trucks are now available. The conversion job is simple. For further details and application data, see your nearest United Motors distributor.

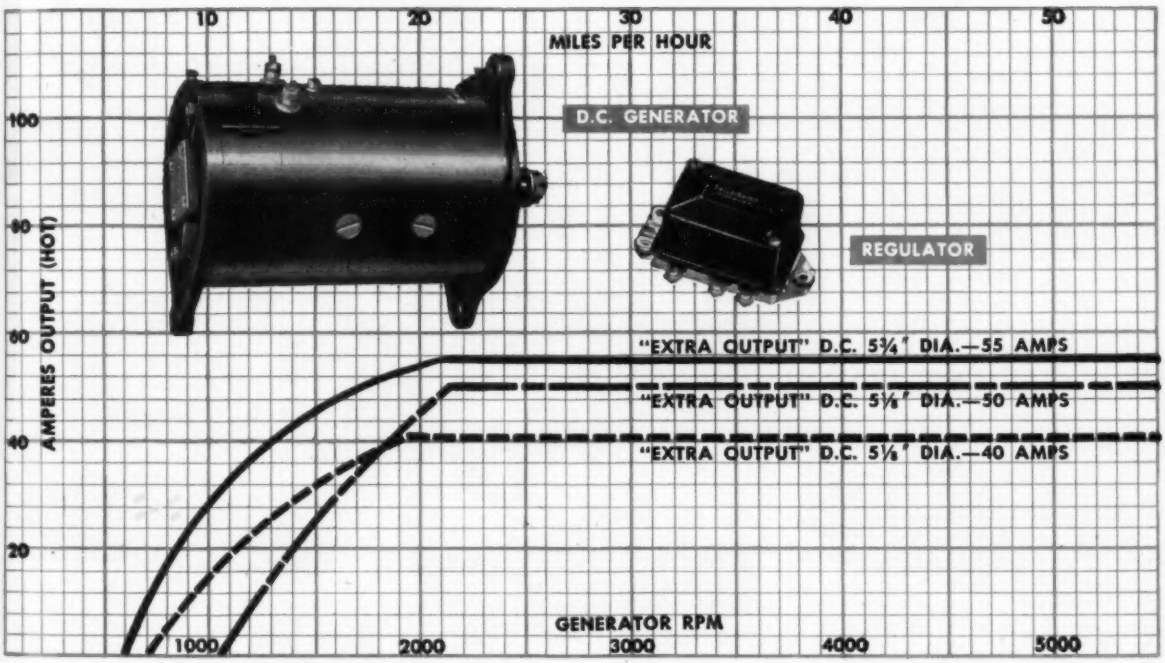
A GENERAL MOTORS PRODUCT — A UNITED MOTORS LINE

DISTRIBUTED BY WHOLESALERS EVERYWHERE

WHEREVER WHEELS TURN OR PROPELLERS SPIN

Right for the Job

HERE'S THE D.C. ANSWER TO HEAVY ELECTRICAL DEMANDS



DELCO-REMY

Extra-Output D. C. Generators and Matching Regulators

Delco-Remy extra-output D.C. generators are an economical answer to the electrical needs of fire engines, suburban police cars, rural mail cars . . . other vehicles with additional lights, two-way radios, or other special electrical equipment in medium to heavy-duty service. Delco-Remy extra-output D.C. generators are low in cost, simple to install, economical to maintain.

DELCO-REMY 40-AMP GENERATOR has low cut-in, about 7 mph, charges from 11 to 17 amperes at curb idle . . . full output about 18 mph —for vehicles customarily used in heavy traffic.

DELCO-REMY 50-AMP GENERATOR has slightly higher cut-in, about 11 mph . . . full output about 21 mph—for vehicles customarily operated at higher speeds, with minimum slow driving.

DELCO-REMY 55-AMP GENERATOR has very low cut-in, about 6 mph; charges at curb idle from 20 to 30 amperes . . . attains full output at 20 to 25 mph—for vehicles customarily operated at low speeds with added electrical loads, such as city taxicabs and police cars.

For further details and application data, see your nearest United Motors distributor.

Delco-Remy

DIVISION, GENERAL MOTORS CORPORATION, ANDERSON, INDIANA

WHEREVER WHEELS TURN OR PROPELLERS SPIN

first in fire fighting

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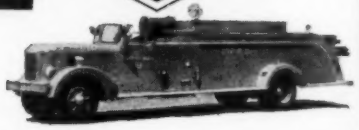
OREN

CENTRAL
ST. LOUIS, MO.

AHRENS-FOX

FWD

THE GENERAL FIRE TRUCK CORP.



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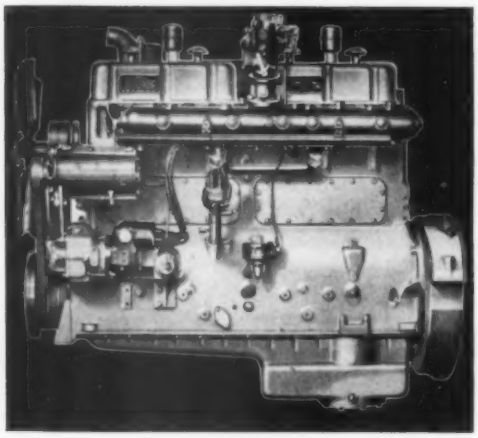

WAUKESHA
FIRE FIGHTER
ENGINES

145-GZB
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six cylinders, 5⅜-in. bore x 6-in. stroke, 817 cu. in. displ., with counterbalanced and vibration dampened 3½-in. 7-bearing hardened crankshaft; dual ignition; precision extra high capacity bearings; overhead valves with Stellite-faced exhaust valves and seats; removable wet sleeve cylinders. Arranged for full electrical equipment and all modern accessories. Send for Bulletin 1594.

221

Ansul

is the only dry chemical fire extinguisher backed by a five year warranty!

Here is proof of Ansul's superiority . . . *a five year equipment warranty*, the only one of its kind in the fire control industry.

For the buyer of fire equipment this important warranty means many *extra* years of trouble-free protection plus freedom from costly and frequent maintenance checks and repairs.

The special design and construction features that make this warranty possible provide not only dependable protection but also *fast*, *effective* fire control. Ansul's *weather-tight* construction keeps out moisture and resists corrosion. *Patented nozzles* deliver the right kind of stream for your fire protection problem. The *sealed pressure cartridge* puts Ansul's "Plus Fifty" dry chemical to work immediately—no delay or lag. And finally *rugged construction* makes it possible for Ansul equipment to give peak performance under the toughest operating conditions.

HERE IS THE BIG TRAINING AND SERVICE PLUS OFFERED ONLY BY ANSUL!
Available without cost to all Ansul users.

Training for your personnel at your plant by Ansul specialists.

Customer training school at Marinette for your key safety personnel.

Visual aids on fire control for your safety meetings and other training.

In-plant survey to scientifically determine your fire protection needs.

Call the Ansul Man!

ANSUL

Get in touch with your local Ansul man through the "yellow pages" or write ANSUL CHEMICAL COMPANY, Fire Equipment Div., Dept. F-13, Marinette, Wisconsin.

SQUEEZES PAST OBSTRUCTIONS

E & J RESUSCITATOR - INHALATOR - ASPIRATOR

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. . . first name in Resuscitators

ACCEPTED COUNCIL ON PHYSICAL MEDICINE and REHABILITATION AMERICAN MEDICAL ASSOCIATION

When partial obstructions will not yield to aspiration, or when the air passages are swollen almost shut, the exclusive E & J feature "Precision Flow Control" assumes life-saving importance in emergency rescue treatment.
With it the operator can quickly find just the exact flow of oxygen that will squeeze past obstructions short of complete blockage to provide full inhalation and exhalation at a *slow but life-saving rate!*

FIND OUT MORE ABOUT THIS VITAL E & J FEATURE . . .
Data and demonstration without obligation.
Write to Dept. 544-7 at address below.

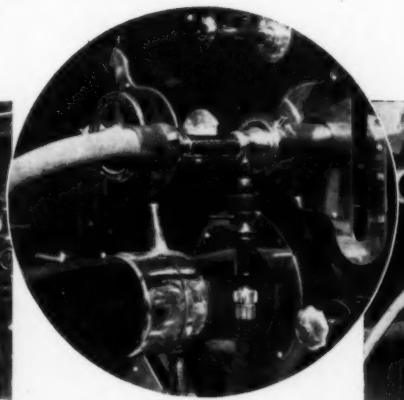
E&J

E&J MANUFACTURING COMPANY

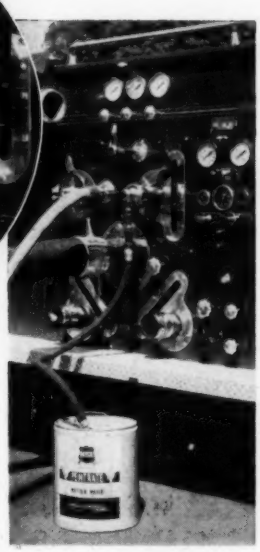
100 E. Graham Place, Burbank, California

Your AMERICAN-LAFRANCE FIRE ENGINE can be an Air Foam Truck, too!...

Model 6L proportioner in operation. Drafting air foam liquid from 5 gallon pail, discharging through 1½ inch hose and model 600 air foam nozzle.



Close up view of 6L proportioner attached to 2½ inch discharge outlet.

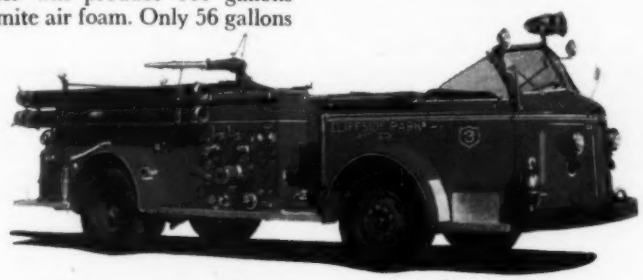


Close up view of 6L proportioner attached to 2½ inch discharge outlet for drafting Penetrate (wet water).

The *New* ALFCO portable in-line proportioner fits any 2½" discharge outlet . . .

The new model 6L proportioner is carried on the truck, instantly available from side step mounting or equipment compartment. In seconds it can be attached to any 2½" outlet to produce air foam or wet water as may be required. Air foam or wet water liquid is drafted directly from available 5-gallon pails. No tank or piping required on the truck.

One proportioner will produce 600 gallons per minute of Foamite air foam. Only 56 gallons per minute of water required to make this quantity of air foam. The low cost of the portable proportioner makes possible the installation of one or more units on each pumper. For protection of exposed surfaces, a minimum of water is required and the foam blanket is retained for a long period. For all flammable liquid fires it offers ideal protection.



AMERICAN-LAFRANCE-FOAMITE CORPORATION

ELMIRA, NEW YORK, U.S.A.

LAFRANCE FIRE ENGINE AND FOAMITE, LTD.

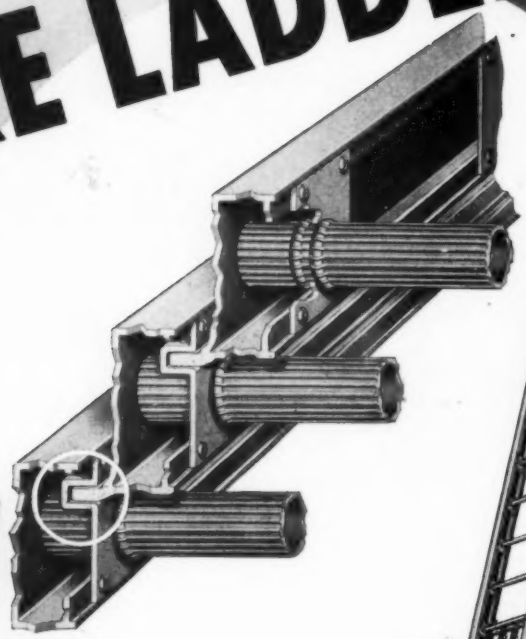
TORONTO, ONTARIO, CANADA

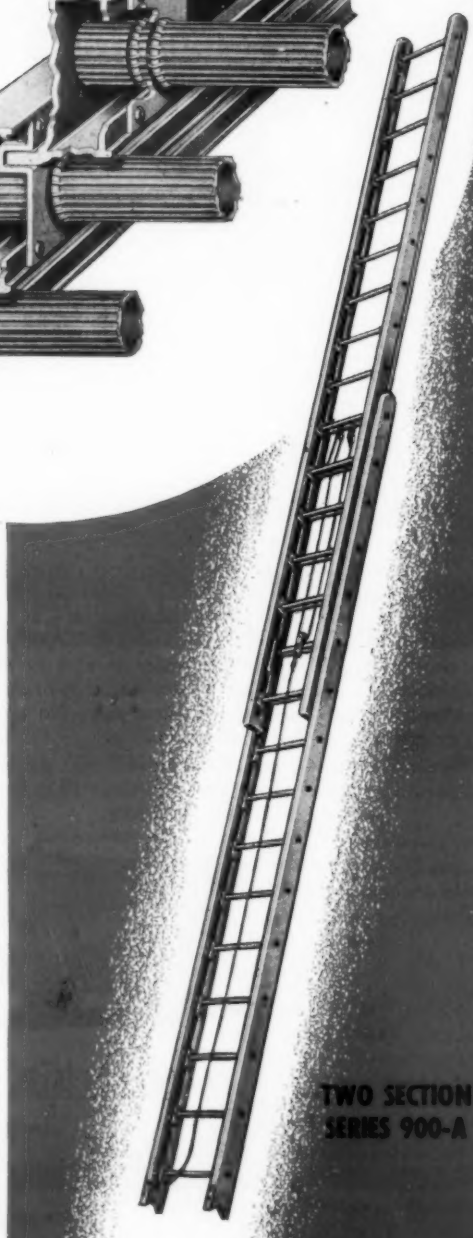
THE SPOTLIGHT IS ON THIS NEW

DUO Safety FIRE LADDER

SERIES 900-A

WITH EXCLUSIVE TONGUE AND GROOVE CONSTRUCTION





A BRAND NEW DESIGN IN THE FAMOUS DUO-SAFETY LINE

. . . and featured in the fire ladder spotlight is this new, outstanding development in aluminum ladder construction. It's Duo Safety's latest addition — the 900-A Series Fire Ladder which combines the strength and safety of Channel Rail construction with an exclusive tongue and groove design that firmly and securely locks the sections together without hooks or brackets. This outstanding structural arrangement prevents jack-knifing of the ladder — and — eliminates the possibility of finger-pinching! Series 900-A will add safety and dependability to your use of fire ladders — Write today for catalog page on this fine new ladder and others in the complete Duo-Safety line.

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NEED 450 MC EQUIPMENT? INSIST ON G-E's

"Performance Guarantee"

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SELECTIVITY GUARANTEED FOR LIFE

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HIGH-Q CAVITIES at both receiver input and transmitter output—your best insurance against TV interference!
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FULL 6/12 VOLT OPERATION. Mobile unit functions from 6 or 12 volt source!
4-CHANNEL OPERATION . . . Here's positive assurance of performance on different frequencies!

IT'S new in every meaning of the word! Each feature of this 450 MC 2-way radio indicates advanced engineering design . . . fulfills all the performance factors you expect from superior mobile communications equipment. The complete value is best appraised by General Electric's confident warranty . . . *Selectivity Guaranteed For Life!*

Any decision to buy 2-way radio equipment must include a careful examination of the new G-E 450 unit. Make this examination and *you'll* become a well-satisfied G-E user. Take the first step . . . the right step . . . *today!* Call our local G-E Communications Counsellor or write: *Section X5984, General Electric Co., Electronics Park, Syracuse, N. Y.*

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NOW! **You get General Electric's guarantee policy when you purchase any new G-E 2-way radio . . . regardless of type!**

General Electric Company, Section X5984
Electronics Park, Syracuse, New York

I want to know more about the G-E 450 MC 2-way radio . . . more about G-E's GUARANTEE!

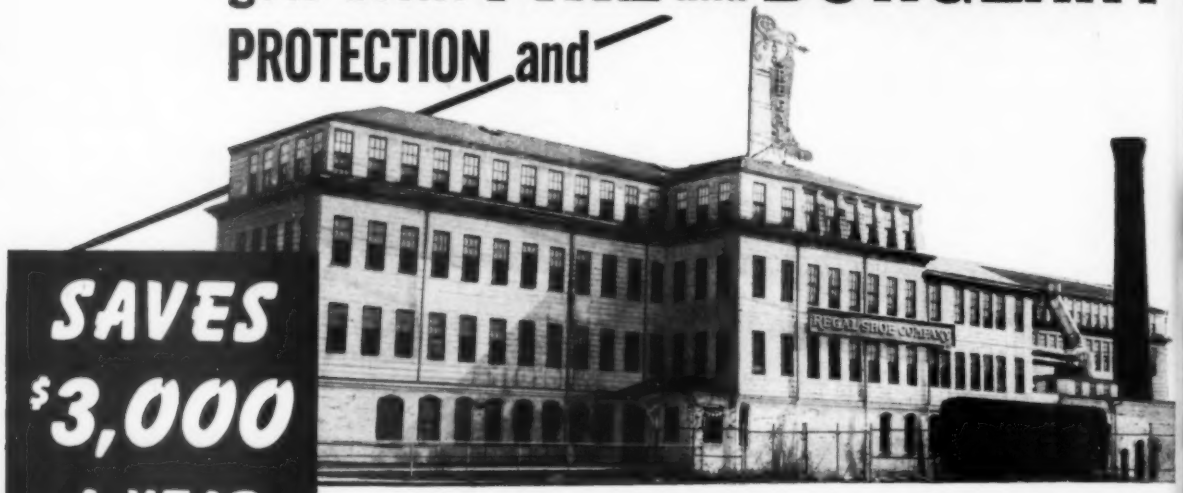
NAME . . . . . .

COMPANY . . . . . .

ADDRESS . . . . . .

CITY . . . . . STATE . . . . . .

REGAL SHOE COMPANY
protects its property *Automatically*....
gets better FIRE and BURGLARY PROTECTION and



SAVES $3,000 A YEAR

ADT Automatic Protection Service has proved a better safeguard for our property, profits and employees' welfare than other types of protection. It has also saved us at least $3,000 a year.

A. L. Clowes

Treasurer
Regal Shoe Company

Most important to the Regal Shoe Company of Whitman, Mass., is the protection of its warehouse from which shipments are made to 110 Regal retail stores throughout the country. For this purpose the management chose a combination of ADT Sprinkler Supervisory and Waterflow Alarm, Burglar Alarm and Industrial Process Supervisory Services. The Regal factory is also ADT-protected.

Mr. Clowes' statement typifies the comments of many executives, from coast to coast, who know that ADT Automatic Services give more security than can be obtained by any other method... and at less expense.

ADT Electric Protection Services guard every type of property, new or old, sprinklered or unsprinklered. The appropriate ADT Fire Alarm Service will detect fire and notify the fire department *automatically*. ADT Burglar Alarm Service will *automatically* summon police when burglars attack. ADT Heating and Industrial Process Supervision will *automatically* detect and report other abnormal conditions.

ADT safeguards, electrically, many billions of dollars' worth of tangible and intangible assets owned by 56,000 subscribers in 1,600 communities. An ADT specialist will show you how combinations of engineered services can protect *your* property.

Call our Commercial Department if we are listed in your phone book; or write to our Executive Offices.

ADT

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A NATIONWIDE ORGANIZATION
Executive Offices
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...ell Balanced!

INDIAN
FIRE PUMPS

Are the "Stepping Stone" to Faster Fire Fighting . . .

You can't have a well balanced fire protection program without plenty of portable INDIAN FIRE PUMPS.

A man can do a lot more work when he has both hands free. Other types of extinguishers have to be carried about but an INDIAN slings right on the back. Uses only clear water, too!

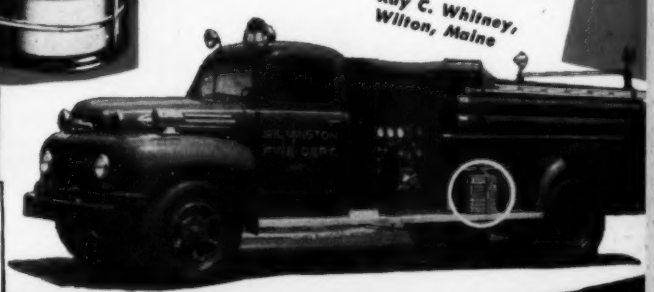
Now is the time to check over your needs. Remember INDIANS last for years without maintenance. Many pumps bought way back in the 30's are still in service.

For maximum fire fighting power at a minimum of cost — choose INDIAN FIRE PUMPS. There is nothing else "just as good."

"Nothing Compares to the INDIAN"

"There is no fire extinguisher that anywhere near compares with the **INDIAN FIRE PUMP.** Last summer we had two bad brush fires which were brought under control with **INDIANS** alone. The only available water we had was in the **INDIAN** tanks. The wind was blowing right toward the woods and six men killed the fire down with just their **INDIAN FIRE PUMPS.**"

Ray C. Whitney,
Wilton, Maine



Darley Champion Fire Truck made by W. S. Darley & Co., Chicago 12, Illinois for Wilmington Fire Dept., Wilmington, Ill. equipped with Indian Fire Pumps.

D. B. SMITH & CO.

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New Ways to Fight Fire

Rockwood offers you two big advantages. One is long, practical experience in manufacture and in the field. The other is constant research that results in **new** methods and **new** devices to fight fire. These pages show you a few of the many products developed by Rockwood that have a vital part in fire protection programs throughout this country.

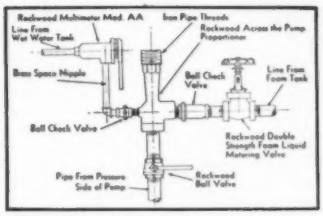
For further details on these products, and many, many others, write for your free copy of the Rockwood Catalog, "Fire Fighting Products." ROCKWOOD SPRINKLER COMPANY, 268 HARLOW STREET, WORCESTER 5, MASS. Distributors in all principal cities.

ROCKWOOD

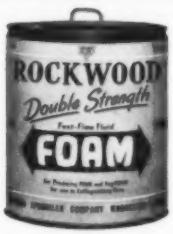
Type FFF FogFOAM Nozzle. Discharges FogFOAM, Solid FOAM stream, and High Velocity WaterFOG.

Type SG-48 WaterFOG Nozzle. Easy to handle. Discharges high or low velocity WaterFOG or straight water stream.

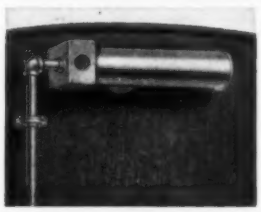
Foam Eductor. Introduces FOAM liquid into hose lines. Used with Type FFF FogFOAM Nozzles.


Rockwood Multimeter Mod. AA
Iron Pipe Threads
Line from Wet Water Tank
Rockwood Across the Pump Proportioner
Brass Space Nipple
Ball Check Valve
Line From Foam Tank
Ball Check Valve
Rockwood Double Strength Foam Liquid Metering Valve
Pipe From Pressure Side of Pump
Rockwood Ball Valve

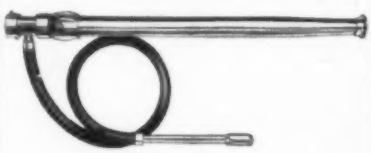
Proportioning Systems. Used when pressure is maintained by pump. Custom-engineered systems also available.



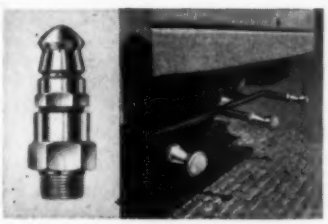
Double Strength Foam Liquid for fire hose line Nozzles and permanently piped FogFOAM and FOAM installations.



Rockwood Foam Maker and Chamber. Used for fighting flammable liquid tank fires.

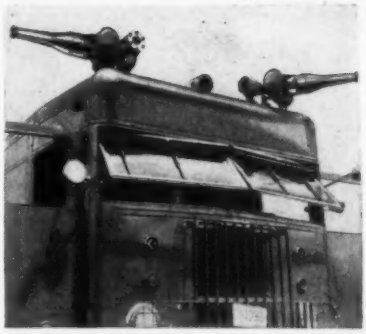


Standard Straight Foam Play Pipe and FOAM pick-up tube. Discharges solid FOAM stream.

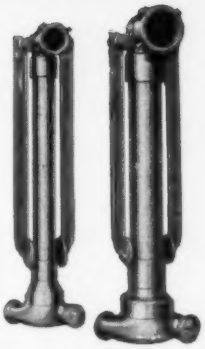


Under Truck and Ground Sweep Nozzles. Used to protect front of fire trucks and parts under trucks.

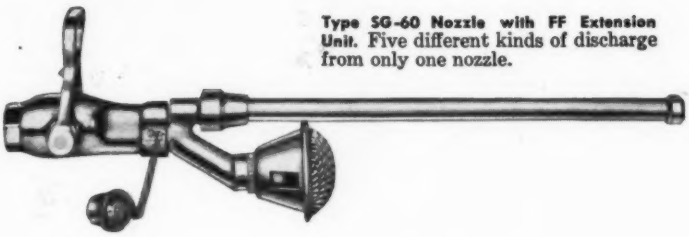
ROCKWOOD
SPRINKLER COMPANY



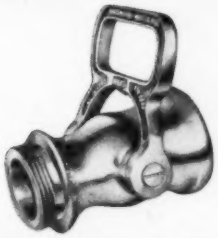
Hydraulically or Manually Controlled Type FFF FogFOAM Turret Nozzle for airport crash fire fighting trucks and special fire fighting trucks for oil refineries, chemical and industrial plants and municipalities.



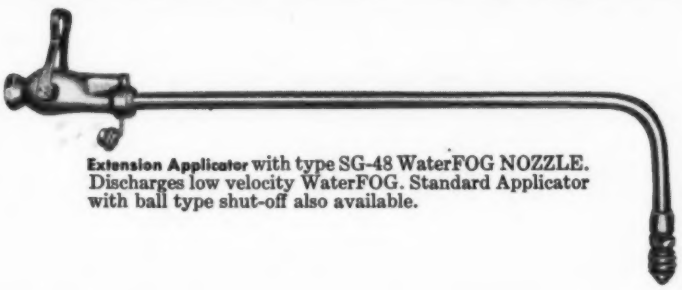
Lightweight Rotating Cellar and Attic Pipe. Fights fires in cellars, attics, under piers, bridges, etc. Also available in a short unit with swivel but without extension barrel.



Type SG-60 Nozzle with FF Extension Unit. Five different kinds of discharge from only one nozzle.



Rockwood Ball Type Shut-Off. Gives operator complete control of water flow from nozzles.

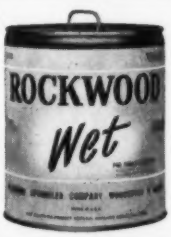


Extension Applicator with type SG-48 WaterFOG NOZZLE. Discharges low velocity WaterFOG. Standard Applicator with ball type shut-off also available.

High Capacity WaterFOG Nozzle. Quickly controls and extinguishes large fires in buildings and flammable liquids.

Type N22 WaterFOG Nozzle. Discharges high velocity WaterFOG. For general use around live electrical equipment.

Rockwood Type N-23 WaterFOG Nozzle with swivel handles. Discharges high velocity WaterFOG with higher discharge, greater range than type N-22 Nozzle.



Rockwood Wet wetting agent. Increases fire extinguishing action of water making a little water go a long way.

Engineers Water . . . to cut fire losses

Ohio Fire Dept. reports:

Stronger, more flexible hose made with Dacron* is easier to use all along the line

Light, flexible hose made with "Dacron" coils readily, is easy to carry.

*REG. U.S. PAT. OFF.

"From hydrant to pumper to fire . . . we've found that hose made with 'Dacron' is easier to handle when every second counts," reports Chief Walter L. Hydaker of the Lima, Ohio, Fire Department. "Its lightness and flexibility simplify operations at the scene of the fire, and afterwards it's easier to rack, dries faster, and stows on the truck with less effort."

The load-carrying "filling" cord that reinforces the hose is Du Pont "Dacron" polyester fiber. It's exceptionally strong, yet light and flexible . . . results in a hose with more strength, but less bulk and weight than ordinary hose of the same inside diameter. And, the great water resistance of "Dacron" helps protect against mildew . . . means extra-long life for hose.

More than two years of field testing have proved the superiority of this new hose in action. Du Pont makes only the "Dacron" fiber . . . does not manufacture hose. Fire hose made with "Dacron" is produced by a number of leading fire-hose manufacturers. Order it from your supplier next time you need hose. E. I. du Pont de Nemours & Co. (Inc.), Textile Fibers Department, Wilmington 98, Delaware.

ADVANTAGES OF FIRE HOSE MADE WITH "DACRON":

- Lighter
- Stronger
- More flexible
- Cuts loading time
- Saves space

DACRON

POLYESTER FIBER

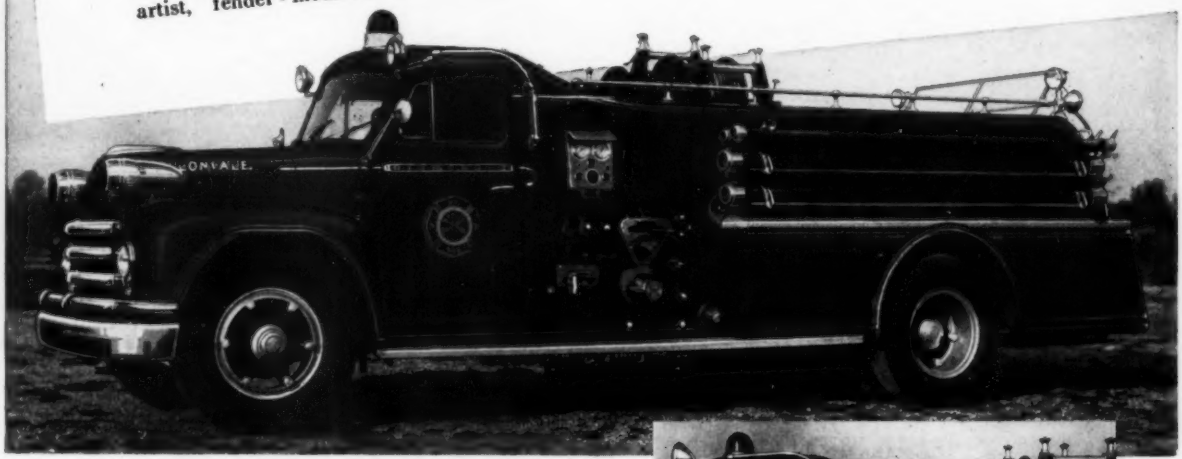
DU PONT

REG. U.S. PAT. OFF.

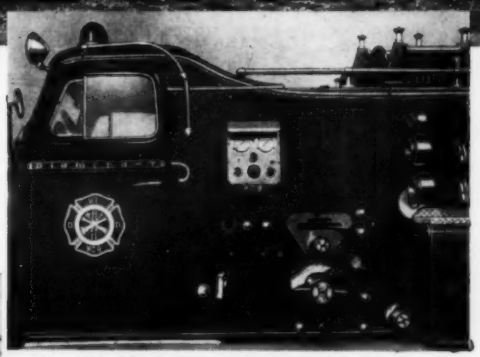
BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

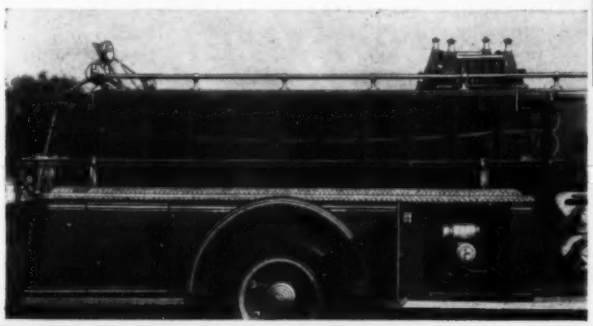
LOOK TO HOWE FIRST FOR THE LATEST IN FIRE APPARATUS

This triple combination 500 GPM pumper, recently delivered to Dillonvale, O., looks and IS a magnificent fire truck. Streamlining of cab into body (*a design feature which Howe pioneered*), free hand gold striping and emblem designed by Howe's professional artist, fender-mounted twin sirens, twin spotlights, chrome-plated rear windshield, make it look the part. More important, Howe users in cities from coast to coast, abroad too, will tell you this truck will PERFORM. Sound engineering in efficient, streamlined fire fighting equipment is the basis for Howe's leadership. See HOWE FIRST!



Streamlined compartment section (below), built flush with running board and recessed to chassis frame, provides depth sufficient to house portable electric generator in front as shown, portable pump in rear. Where required, sliding trays are installed for mounting these so that they can be removed to any strategic spot. There is storage space also for miscellaneous items. Flush doors have flanges on all sides for rigidity, close fit, and noise elimination. Waterproofing is insured by special Howe construction.





This truck has specially built, non-slip running boards. Bumper nozzles, supplied by power take-off pump, for fighting grass fires, are operated by remote control from cab. Note in cut above that controls are symmetrically arranged, clearly and concisely labeled. Automatic prime indicator, *exclusive with Howe*, is above pump gear shift. To prevent hose damage, reels have full swiveling horizontal and vertical rollers. All operating valves are ball type, finger tip controlled.

HOWE

Member FAM (Fire Apparatus Manufacturers Association)

APPROVED BY THE NATIONAL BOARD OF FIRE UNDERWRITERS

"dependable fire apparatus since 1872"

FIRE APPARATUS COMPANY

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FIGHT FIRES *faster*

With this NEW coupling

NEW

FORGEX® coupling

PATENT PENDING

ALL BRASS
LIGHT WEIGHT
DROP FORGED
STRONGER

the perfect mate
for your light weight hose

★ **LIGHTER** — Forgex Couplings make your tough hose handling jobs easier, faster. They're half the weight of a cast coupling.

★ **TAPERED HOSE BOWL** — Forgex Coupling will stay on hose under any pressure. Tested to over 1500 lbs.

★ **TOUGHER** — You'll drop and drag your hose and couplings in use. Giant forge presses smash the brass used in Forgex until it's 25% denser. Independent laboratory tests show Forgex up to 100% tougher and stronger than other couplings.

★ **UNCONDITIONALLY GUARANTEED** — Every Forgex Coupling guaranteed to give long years of service.

★ **AMERICA'S FINEST** — Contains all the features of the Akron Rockerlug Coupling, used by more fire departments than any other.

AKRON BRASS MFG. COMPANY, INC.

WOOSTER, OHIO

MAXIM

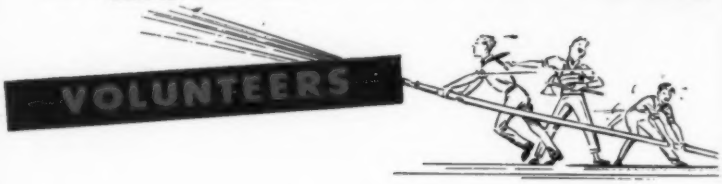
FIRE APPARATUS

WHEN you buy apparatus—be sure it's big enough to do the job—be sure of its dependability. We design and build a complete line of motor fire apparatus—we design and build it to do a job—and to keep on doing the job year after year. The job requires the best you can buy. Don't settle for anything less than a Maxim.

PUMPERS 750-1000-1250-1500 GPM
AERIALS UP TO 100 FEET
QUADRUPLES IN ANY COMBINATION
CRASH TRUCKS TO COVER ALL CONDITIONS

MAXIM MOTOR COMPANY
MIDDLEBORO MASSACHUSETTS

For the smaller community— POSITIVE, INSTANT CONTACT with the



Provide your community—your property owners and your children — with all of the advantages of a big city fire alarm system.

At a cost well within reason, you can have a municipal fire alarm box system that will immediately announce the *location* of a fire.

Best of all, the smaller community can now get the basic fire alarm protection it needs, and extend the system circuit-by-circuit to avoid heavy investment at any one time.

As you know, almost every big fire *starts* as a *small* fire. Prevent delays with a positive, dependable fire alarm box system.

Keep small fires from becoming big fires — with an adequate fire alarm box system.

THE GAMEWELL COMPANY
NEWTON UPPER FALLS 64, MASS.
In Canada: Northern Electric Co., Ltd., Belleville, Ont.

GAMEWELL®

THE BOX IS POSITIVE
Reduces Human Error

AUGUST, 1954

FIRE ENGINEERING

VOL. 107, NO. 8

With the Editor

I.A.F.C. Starts Membership Drive

The International Association of Fire Chiefs has embarked on a membership drive under the guidance of Chief G. R. McAlpine, Oklahoma City, Okla., Chairman of the Membership Campaign and former President of the Association.

While the membership of the I.A.F.C. is at an all-time high, there are still many fire chiefs and other fire department officers who are not, but should be, members.

The I.A.F.C. is the recognized voice of the fire service. This is clearly shown by the prominent place it has been assigned by the Federal Civil Defense Administration and other agencies at Washington. Quite a change from the early days of World War II when the Association was not even known among those federal bureaus which were concerned with the protection of lives and property against enemy attack—incendiary and otherwise! But to be able to exert its maximum influence, the Association must have on its rolls as members a great majority of those in the fire fighting profession.

Today, with the growing pressure for fire and police department consolidation; with the growing resistance to sorely needed upward adjustment of fire department salaries, and with increasing agitation to cut fire protection expenditures, unity and strength are vital if the fire service is to successfully resist these threats.

During the past decade, under the leadership of the Association, major progress was made in fire protection as well as maintaining benefits for fire department personnel. Much remains to be done. The service cannot stand still. It must continue to advance, or it will begin slipping backwards under the pressure of the multiplicity of groups who are interested only in the "economy" phase of city administration.

The Association has taken the lead in providing the fire service with timely, useful, authentic material. A list of technical bulletins made available by the Association to its members constitutes a veritable library on fire prevention and protection. Forty-eight books and bulletins on as many different fire service topics have been published and distributed to its membership in the past few years. The value of these books is far above the amount paid for membership in the I. A. F. C.

The Association has also been successful in bringing about upgrading of salaries in many fire departments. Its committee on fire department salaries, under the leadership of the Vice President, Chief William Fitzgerald of Seattle, has effectively turned the spotlight on fire departments throughout the country having below-par salary scales.

Practically all of the major advances in fire service methods in recent years have been brought about by the Association or its members. Radio, inspection by radio-equipped fire companies, water fog, and wet water are but a few of these developments.

Some of the benefits a member of the I. A. F. C. receives include:

1. Booklets and special reports prepared or reprinted by the Association on all phases of fire prevention and fire protection.
2. Monthly "Fire Chiefs' News Letter" containing news of the activities of the Association and its members; new developments in the fire service field.
3. The Annual Proceedings of the Association—a 300-page book wherein appears all of the technical papers presented at the Annual Conference, together with discussions thereon.
4. Current Bulletins of SPECIAL INTEREST prepared by the National Board of Fire Underwriters.
5. All new regulations and research reports issued by the National Board of Fire Underwriters.
6. Principal papers presented at the Fire Department Instructors' Conference (printed and bound in a handy volume).
7. Principal papers presented at the Annual Seminar and Training Course in Arson Investigation at Purdue University (printed and bound in a handy volume).
8. The opportunity to participate in the continuout interchange of ideas and experiences of the leaders in the fire service.

Though now enjoying the greatest membership in its eighty-one years of existence, the I. A. F. C. is vigorously driving for still greater enrollment, for it well realizes that the service it is able to render its members and the fire service in general is directly proportional to the size of its membership roll.

No progressive fire officer can afford to pass up membership in this alert, progressive association. To keep abreast of every change, every advance in the science of fire protection, membership today in the International Association of Fire Chiefs is a "must."

Fred Thomas

Los Angeles Firemen Avert Potential Harbor Disaster

By PAUL DITZEL

LOS Angeles' worst harbor fire in years severely damaged the San Pedro Marine Terminal of the Tide Water Associated Oil Co., when 11 storage tanks in an area of 17 erupted into a flaming volcano.

The three-alarmer kept Los Angeles Fire Department equipment and personnel busy for more than 48 hours and resulted in the movement of 37 pieces of apparatus from as far away as the San Fernando Valley.

Superintendent F. E. Coyle of the terminal said damage would be in excess of $1,000,000 as a result of the inferno, which killed a Tide Water gauger and injured two firemen.

The Tide Water Terminal was built in 1922 and served as a center for marine pipeline operations. Tanks at the farm ranged from 5,000 to 55,000 barrels capacity with the larger ones having flat water-deck roofs. All tanks were of the typical American Petroleum Institute standard riveted construction, said a report prepared by Battalion Chief A. W. MacDougall, who was the first officer to arrive. One tank had recently been equipped with a double deck floating roof and plans were underway for installation of floating roofs on four others.

The terminal was divided into two sections, surrounded by a reinforced concrete wall 14 feet high. The dike provided impounding basins of a capacity equalling 110 per cent of all tanks and was in accordance with the Los Angeles Municipal Code. Drainages within the basin were fed to a 20 by 40-foot skim pit. Smaller tanks were located on the western side of the plant where tank truck distribution operations were carried on. This area was not involved.

High dike walls made fire fighting operations extremely difficult and, in addition made it impossible to fight effectively the early small ground fire at close quarters

Fire fighting equipment at the plant consisted of a conventional foam solution system of A and B tanks, plus a pump house and lateral lines to foam chambers on the tanks. Water mains were maintained throughout the plant area and all tanks were equipped with conventional type vents and self-closing gauging hatches.

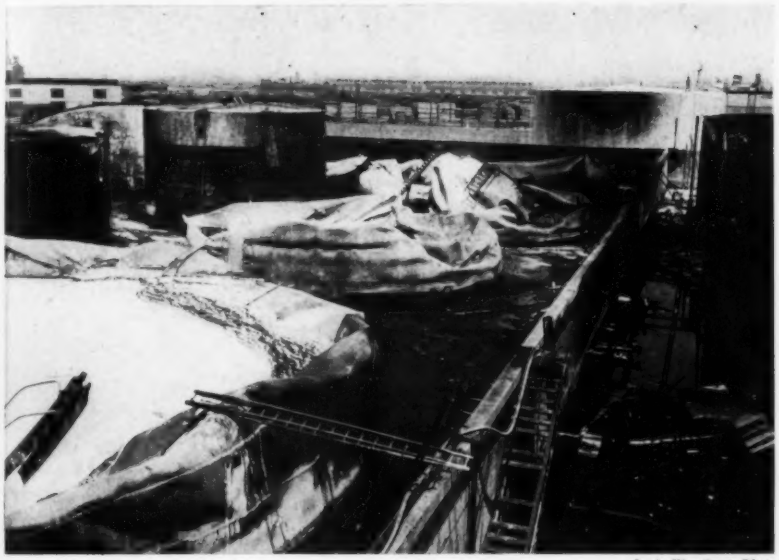
Plant operations were quiet the night of the fire, June 25, 1954, except in the vicinity of two tanks. A plant gauger was pumping the bottom from one of the tanks to a neighboring refinery. The tank contained about 1,773 barrels of gasoline stock. The other tank held about 152 barrels on one-inch of water and this was being pumped to ballast another tank. The two tanks being pumped exploded almost simultaneously and threw their roofs free from their shells. The gauger's body was found inside one of the tanks four days after the fire. Presumably he was on the roof of the tank when it exploded and fell inside almost as if a carpet had been pulled out from under him, plunging him to the bottom.

The actual cause of the fire has not been determined. Operations apparently had been normal from 4:15 p.m., when the terminal supervisor left the plant, until the time it exploded.

The San Pedro Signal Office of the Los Angeles Fire Department recorded a box alarm and a telephone call from a private citizen. These were received at 6:25 p.m. A cruising police car also spotted the heavy black smudge loom up and radioed the alarm to its complaint room which in turn notified the Fire Department's Signal Office in Westlake Park. The police car reported the explosion had occurred in the adjacent Todd Shipyard. The Westlake Office relayed this information via radio to the San Pedro dispatcher.

San Pedro dispatched a full waterfront assignment of two engines, a truck, one salvage, two fireboats, a boat tender and Chief MacDougall of Battalion Six. Subsequent calls for additional apparatus brought six more engine companies a utility company, plus a rescue unit which took a boat engineer to the receiving

Tide Water Oil installations at height of fire. Note high dikes surrounding and dividing plant.



L. A. Fire Dept. Photo

Tide Water Plant after fire had been extinguished

hospital after he was overcome by fumes. Other equipment was relocated by the San Pedro and Westlake Signal Offices, including a concentration of engines with monitors in an area south of Santa Barbara Ave., as a precautionary measure.

Chief MacDougall's report shows that 12 hand lines, four wagon battery streams, three fireboat streams and three foam generators were used. The Los Angeles Fire Department was aided by 100 Coast Guardsmen who assisted Tide Water employes in operating generators and hand lines.

"If the initial fire could have been confined to the small amount of gasoline in the two tanks, the fire fighting problem would have been relatively simple," said Chief MacDougall. "However, the explosion ruptured a pipe line south of one of the tanks and fed a small amount of fuel oil onto the ground, causing a fire south and southeast of the tanks.

"The initial hose lines were laid in from the west and the north and a wagon battery cooled another tank from the east. The sump pumps failed to operate because of power failure, and with the increasing water level spread fire and caused other pipe failures," said Chief MacDougall.

About 7:45 p.m., the ground fire drove the firemen, who were operating hand lines, out of the tank lot. Later, seven other tanks were surrounded by fire as other pipe lines failed. By this time, large amounts of water from the fireboat, the boat tender and the Coast Guardsmen's lines resulted in a serious ground fire as water carried the oils to all parts of the enclosed area. Fifteen minutes earlier the pipe trench between the pump house and the west wall was filled with foam as gasoline fumes appeared to be coming from the trench.

Three hours later, foam was lofted over the west dike and the ground fire was driven back into the central area. Foam also was used from the north wall in the same manner.

Between 8 and 10 p.m., the ground fire was so severe that the high flash oil in four other tanks heated sufficiently to cause their roofs to crack at the roof shell seams and by 11 p.m., all these tanks were blazing. Seam breaks were smaller on three other tanks and the fire consequently was less intense. Company figures showed that of about 194,000 barrels of stock, 162,000 was saved.

As is customary in Los Angeles area petroleum operations, the various companies pooled their technical knowledge, foam powder and generators. All types of foam were used, for a total of 400,000 pounds being consumed.

Chief MacDougall's summary of the fire noted that the high dike walls made fire fighting operations extremely difficult because it was impossible to efficiently fight the early small ground fire at close quarters. Moreover, cast iron and screw fittings characteristic of early tank farm construction failed in fire exposure and greatly intensified the ground fires.

The great amount of cooling water used, together with the power failure, made it impossible to pump out the area, and this, coupled with the inaccessibility caused by high dikes, prevented fire fighting except from the dike walls. The flat water top type of opening, unlike cone roof tanks, was a handicap in cooling the tanks' side walls.

Foam was effective on the ground fire as well as the fire in two of the tanks.

"Foam was used under the most adverse conditions because of high dikes and failure of the dry foam type laterals during the ground fire," Chief MacDougall's report concluded.

Among officers at the fire were Assistant Chiefs William Miller and Marvin Meador, who had just been promoted to Chief in Charge of the Fire Prevention Bureau and Division 5 Coordinator, respectively.

Fire prevention lessons learned at the fire emphasize the following nine points:

1. Floating roof tanks are superior to flat and conical roofed or open tanks. There were some floating roof tanks in the farm.
2. Foam protection should be provided for all tanks.
3. Adequate distance separation between tanks is essential.
4. Main control valves should be located outside of dike walls. They weren't at this farm.
5. Properly trained personnel familiar with valve control operation should be on duty at all times.
6. Hydrants should be in easily accessible locations, at a safe distance from the hazard area.
7. Diking capacity should be at least equal to the total capacity of the enclosed tanks.
8. Limitation on the number of tanks

(*Continued on page* 678)

L. A. Fire Dept. Photo

Close placement of tanks and exposed pipes and fittings contributed to spread of Tide Water fire

One of the older Magirus wooden ladders in Montreal. The 100-foot ladder is in four sections. Roof ladders are mounted on the steel side trussing of the bed-ladder. Note the operator at left.

Montreal's fifth and newest European type aerial ladder truck. This unit was acquired last year. The four ground jacks of the unit pictured are mounted in the body and operate from a single lever.

Montreal Operates Two-Piece Ladder Companies

European Type Aerial and City Service Unit Respond As Single Company to Provide Full Ladder Complement

By DONAL BAIRD

ONE of the most striking differences to be noticed between our North American fire apparatus and that used by the fire services of Britain and Europe is in the design of aerial ladders. The short stubby chassis and the rear end-mounted turntable of the European aerial truck have become familiar on this side of the Atlantic from pictures of war-time air raid fire fighting. The usual reaction to this "turntable ladder," as the British call it, is that it would be no good in our fire departments because it carries no ground ladders.

An interesting departure from this opinion is found in one major Canadian fire department.

The Montreal Fire Department, which operates 48 stations in a bustling bilingual city, has been using European rear-turntable aerial trucks for 24 years and, on the basis of this experience, recently ordered its sixth such aerial. The department has adapted ladder company operations to accommodate their use, but otherwise fire methods in Montreal are pretty much typical of any North American fire department.

The most obvious attribute of the rear-turntable aerial is its maneuverability. This factor is important to Montreal, whose narrow streets in the old warehouse, loft and financial districts are reminiscent of Europe itself. Short hose wagons were developed here because of this. Montreal's original Magirus aerials from Germany also proved to the fire department's satisfaction to be a highly suitable performing all power-operated ladder for 1930. Automatic levelling or plumbing of the ladder when operated on a hill is of additional significance in view of the hills to be encountered in the city.

As a result of its success with the first two Magirus aerials delivered in 1930, the Montreal Fire Department's basis of ladder company operation in downtown districts has been developed around this type of apparatus which so well suited the need for maneuverability, ability to get through congested traffic and take up little room on the street.

The adoption of the European aerial obviously would require an adjustment in ladder company response because of the lack of a full complement of ground or loose ladders on these trucks. A few ladders have been mounted on the Montreal Magirus aerials for convenience, but city service ladder trucks are assigned to run with the aerials. This has amounted to what is, in effect at least, two piece ladder companies. The aerial ladder is on one truck and the ground ladders on another.

Many cities, and the National Board of Fire Underwriters, appreciate the advantages to be gained from the use of two-piece pumper companies. When the pumper is tied up at the hydrant, for example, the hose wagon is free to lay hose. It should be generally conceded that this separation of the various basic functions of fire apparatus permits more efficient operations, provided it is within reasonable economic limits. In this way, the Montreal Fire Department found that their "two-piece ladder companies" were not an inconvenience, but a convenient and efficient method of providing ladder service.

European fire brigades do not encounter this question, since they do not

feel the need of large assortments of ground ladders as used in North America. City service trucks hence do not form part of the British or European fire brigade.

Thus, at a Montreal fire, an aerial may be seen tied down in front of the fire building while the truck carrying ground ladders, small equipment and tools is parked conveniently out of the way of operations. The aerial may be returned to quarters if not needed and the city service truck remains at the fire with tools and manpower for overhauling or other chores. The short (31 feet) rear turntable aerial occupies very little space in front of the fire building and in a narrow 30-foot Montreal street two of them are frequently positioned in front of a narrow building without obstructing the street. In the opinion of Director Raymond Paré this is one of the most significant features of these ladders. They can also be put to work in alleys and yards or get in under overhead wiring. This type of aerial has proven a solid water tower and the Montreal Fire Department often operates two good streams from each. The department's only water tower was abandoned some years ago, being considered no longer necessary.

The financial outlay in maintaining the city service trucks involved is not high. Horse-drawn trucks were converted by the attachment of motor tractors. Many of these are still in service, the commercial truck tractor units being replaced from time to time.

On the basis of his experience with the rear turntable aerial and adaptation of fire methods to its use, Director Paré of the Montreal department, who was at one time a chief master mechanic, now stations no other type aerials in the high value districts and makes sure that at least one responds to second alarms elsewhere in the city. A number of conventional American aerial ladder trucks are in service in other parts of the city. They range from older spring-hoist wood ladders to the latest all hydraulic steel type.

In Montreal, where fires in ancient buildings of the older city must be hit hard and fast, the value of the aerial ladder as a water tower is stressed. The Montreal aerials mount permanent ladder pipes at the end of the bed-ladder and these have a convenient wheel controlled elevating and depressing cable arrangement. In addition, a detachable, horizontally swivelling ladder pipe is used at the top of the ladder. The two may be set in operation without delay and are frequently operated simultaneously.

Five man crews are carried by the rear-turntable aerials and the service trucks usually carry four men. First alarm response in the congested mercantile districts includes two of the aerials with two or sometimes three city service trucks. Several ground ladders are carried by the aerials on a side mount and, while these must be removed in order to operate the ladder to one side, freedom of operation is permitted to front, rear and the other side when they are in place.

The German Magirus aerial ladder was introduced into the United States in the 1920's when an agency was set up in the midwest. A number of trucks were sold at that time to cities in midwestern states, but for various reasons the organization was not successful and did not continue in business long. The city of Milwaukee purchased one Magirus ladder in 1928. This 100-foot aerial has been in active service in the high value district since, with an extensive refitting of engine and running gear in 1946.

The Montreal Fire Department became interested in the European type of aerial as the result of a demonstration of an 85-foot model which was on its way to Calgary, Alberta, in 1929, and decided to purchase two 100-footers. These arrived complete on German chasses in 1930 and have seen continuous service since. The ladders are of wood, in four sections with steel trussing. The raising mechanism on these earlier models is very much the same as that on the latest ones, embracing all automatic and safety features.

A third ladder was imported directly in 1939 and mounted on a Canadian chassis. This later unit was equipped with a steel ladder of welded tubular construction like American ladders of today.

These three trucks served through the war without requiring any replacement of parts, while the fire department kept its fingers crossed on this score. As soon as European trade resumed after the war, a fourth ladder was ordered from Germany and this was likewise mounted on a Canadian chassis.

The fifth and latest European aerial ladder went into service in Montreal last summer. It was assembled on a Mack chassis for the Fire Apparatus Division of Mack Trucks of Canada by the Maxim Motor Company, and incorporates the latter company's single lever control of all four screw-type ground jacks. A novel feature is a short auxiliary fly ladder attached to the regular top fly and which can be used to gain an extra eight feet of height, which makes this

(*Continued on page* 688)

A British Merryweather 100-foot ladder on a Canadian Thibault chassis. This unit, built for the City of Hull, Quebec, carries 130 feet of ground ladders of up to 35-foot length recessed within the body. Note the four outrigger type ground jacks. One of the two ladder elevating screws on this make may be seen projecting above the elevating structure.

Two of the Montreal Fire Department's European type aerials working on a small corner at a recent fire. Firemen are operating the swivel type ladder pipes from the ladder tops while the large pipe on the bed-ladder is being operated from a control below. A portable turret is being operated from the nearer truck's deck. The way men can step from the street directly onto the ladder is clearly shown.

Fire Service Ventilation in Principle and Practice

Part IX Continued—The Use of Power Operated Air Movers in Ventilating

By ROI B. WOOLLEY
Assistant Editor

Editor's Note: The previous installment of Part IX in the series on ventilation dealt with the introduction and use of smoke ejectors, injectors, blowers, etc. This Chapter of Part IX is devoted primarily to other types of powered air movers, such as fans, circulators and the like.

Although the use of smoke removers and movers of all types is presently very limited among this nation's fire forces, nevertheless there are sufficient fire departments utilizing such equipment for ventilating and salvage operations to provide some interesting case histories.

Unfortunately, lack of space prevents publication of many of these examples. One in particular, the use of smoke removers, circulators, water fog, as well as efforts at natural ventilation, at the recent Reading Terminal Building in Philadelphia, Penn., could well take up several Chapters by itself. This was one of the first serious, stubborn basement fires in mixed mercantile and commercial occupancies in which every possible existing form of powered and natural ventilation was employed. The value of such thoroughly-rounded ventilating practice was proved conclusively at this fire, to the credit of the Philadelphia Fire Department. Our readers have already been shown some pictures of the ventilation operations at this 'worker'. It is planned to publish the complete story of this fire in a subsequent issue.

But powered ventilation is not for the big city alone. Any and every fire department can and should employ it, or at least be prepared to do so. It requires no clairvoyant to envision the day when power-venting will be just as much "standard strategy" in fire attack, rescue and salvage, as the use of respiratory protective equipment.

Although this is the concluding chapter of the series on Fire Service Ventilation, the subject will be kept before our readers in subsequent issues.

The editors will welcome comments from our readers on this interesting and important development in modern firemanship—together with "case histories" of its application by local fire forces.

Heavy, hot, toxic smoke from burning cartons and synthetic materials punished Manhattan fire fighters at this 42nd Street shoe store fire until ventilation was accomplished. Note "hot smoke" rising. Since this fire, the city's fire fighters have been provided with more breathing equipment.

WHEN the first household electric fans were used to remove kitchen odors and to cool heated areas, there was born the idea that such devices could be adapted to rid smoke-filled areas of their contamination, and that by replacing those contaminations with fresh air, the heated smoke and the structural members and contents of the building involved by the fire would be cooled down, at least to some degree.

Through the years, various experiments have been conducted to develop fans and circulators that would deliver high CFM air removal with low power input, ease and safety of handling, reliability of operation, and at reasonable cost. Today the fire service is buying and using such fan-ejectors and blowers in ever-increasing numbers.

At least four manufacturing concerns are producing special mechanical smoke ejectors of this portable fan type. They are the Super Vacuum Manufacturing Company, Denver, Colo.; the Neep Equipment Company, Portland, Oregon; The Herman Nelson Corp., Moline, Ill., and the Wooster Brass Company, Wooster, Ohio. A number of other companies produce fans and circulars suitable for certain fire department needs.

These fan air movers go by different names, i.e., exhausters, ejectors, blowers, etc. and new uses for them are being discovered by fire forces. Their compactness and light weight permit them to be carried on running boards of ladder and other trucks, or compartments of squad and emergency apparatus, or even in fire chiefs' vehicles. They can operate either off the domestic lighting circuit, or street power circuit, or can be powered by portable generators. Different fire departments have developed original and ingenious methods and attachments for applying them, including strap and metal hangars, wheeled carts or stanchions, and the like.

These various units come with different shapes and kinds of fan blades, located in different types of housing. Motors are generally for AC electrical supply. They usually have waterproof wiring. They are provided with some sort of carrying handle or handles, supporting legs and guards over the fan. The propellers are designed to move considerable volume of air. Thus one unit weighing 45 lbs., having one-piece cast aluminum 16-in. blades, has a capacity of over 5,000 CFM. The ¼ H.P., 110 v. 60 cycle AC, motor turns up 1,725 RPM. A 24-in. job with ¾ H.P. motor reportedly will move 11,750 CFM. Another type weighing only 40 lbs. delivers better than 4,250 CFM.

One of the earliest users of this type "ejector" was the Fort Collins, Colo., Fire Department, under former Chief T. P. Treadwell. In 1938, the department installed a portable smoke ejector or exhauster which moved 3,500 CFM and was equipped with 150 ft. of packing house electric cord on a reel. It could be plugged into any 110-volt circuit or yard loop.

Chief Treadwell told FIRE ENGINEERING: "The ejector has been used very successfully on all types of fires from basement to elevator fires. It has also been used when fighting fires in the presence of fumes from leaking refrigerant pipes and compressors. In several instances, where gas masks were necessary to combat fire or fumes, only a few moments with the ejector made it possible to continue work without the protection of a mask.

Chief Treadwell's department used the circulator with a special deodorant and pine oil to rid dwellings and other occupancies of post-fire smoke.

In 1940, former Chief F. A. Taylor of Colorado Springs, Colo., reported his department had three ejectors of the same type in service and found them extremely valuable. "We have them mounted on a box-like frame which will fit into a window, or can be turned down over a coal hole to pull smoke out of a basement. As the fans are built to move a large volume of air, they make an excellent aid to ventilation during a fire and can be used to quickly remove smoke from a building after the fire is out. They are easily handled by two men and can be carried by one if necessary, which makes them available for any floor or part of a building. We have used them to great advantage in several basement fires and a number of times in the upper floors to clear out smoke. One instance was a fire at the back of a three-story furniture store which burned through the back windows. The fire was stopped here but the building was well filled with smoke. We put these fans to work immediately and cleared the building, with the result that there was no smoke damage, which is unusual in fires involving this type of merchandise. . . . We consider them an excellent investment, as they have saved their cost several times over, and are a great aid to the men in getting to the seat of the fire."

In Spokane, Wash., former Chief William Payne installed five such units about twelve years ago and found them very useful in ventilating and removing smoke from smoke-filled rooms. As spark-proof motors have been installed in the fans, there is no danger of sparks from the motor igniting flammable gas, should such be present.

The experience of the Fargo Fire Department, Chief Fred J. Wells with these type extractors has been enlightening. Chief Wells writes: "We have one extractor rated at 1,000, four rated at 3,500 and one rated at 10,000 CFM. Extractors are carried so as to have them all at a fire in the downtown district on first alarm assignments. In the residential areas we have three available for use. If we need more we can use two-way radio and obtain them from trucks not on call. Chief Wells is another who has made considerable use of deodorants and air movers.

One of the first large departments to install and make regular use of this type air circulators was the Los Angeles Fire Department. Mechanical ventilating by means of exhausters and blowers is featured in the department's educational training film *"Ventilation."* Some of the mechanical ventilating operations of this department are pictured in this Chapter.

Case History—New Haven

This fire was in a reinforced concrete building, five stories on the street level, six stories in the rear, having one sub-basement. The first story rear had windows on one side, and a stairway about three foot wide, to the sub-basement. There were three openings in the sub-basement, under a loading platform, and these had large fans in them. Unfortunately, they had lost most of their power and were not of much use to the fire department. Considerable time was lost by fire fighters in removing one fan from its opening so that a vent could be provided for the heavy smoke given off by synthetic rubber products.

The fire was located in the sub-basement against a rear wall, in a pile of crude and synthetic rubber, wooden partitions, etc. The ceiling was about six foot high, with the usual hanging-pipes, steam lines, conduits, sprinkler lines, etc. As usual in storage places, the material was piled high, and the aisles were very narrow.

Some sprinkler heads were working during the fire, but one sprinkler line unfortunately was broken and this reduced the effectiveness of the heads that otherwise would have done a good job controlling the fire.

Men of the New Haven Fire Department responding on three alarms, under direction of Fire Chief Thomas Collins, were forced to use demand type respiratory protective equipment to get at the fire, and to ventilate. Twenty-four such units were used in this operation. Each unit was refilled three times.

Photo courtesy Homelite Corp.

Firemen, temporarily held up in their fire attack by heavy, toxic fumes in this basement fire, place portable smoke ejector in action. Men were soon able to enter area without masks.

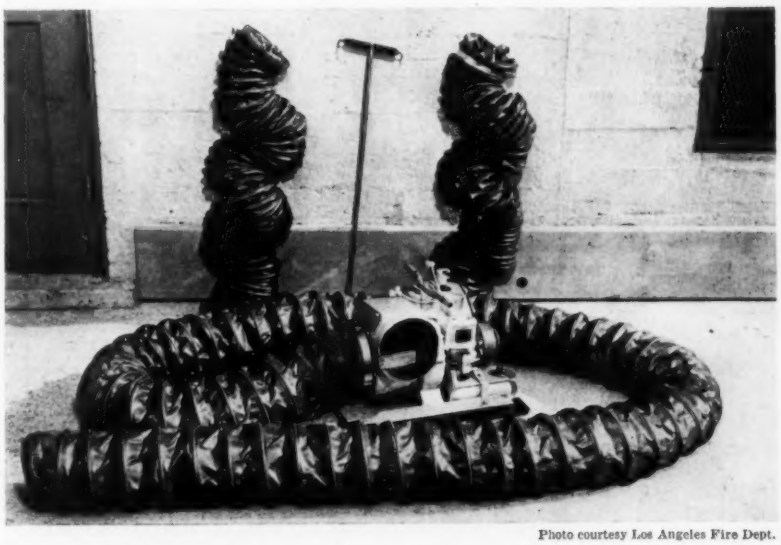


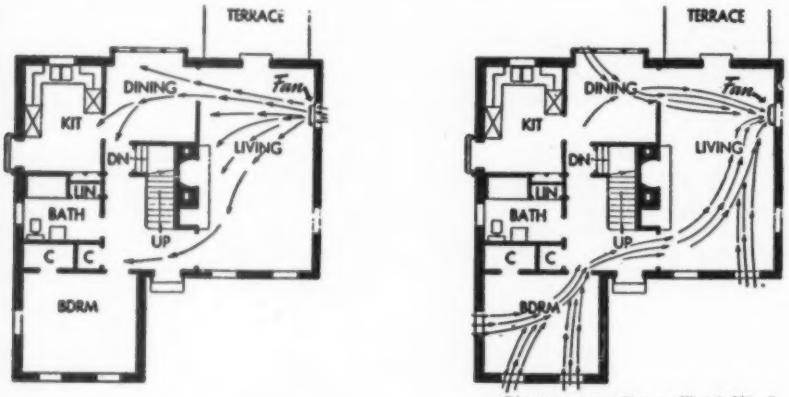
Photo courtesy Los Angeles Fire Dept.

The folding, or collapsible, tubing supplied with the Homelite smoke ejector comes in 20-foot sections. Those used in the Los Angeles Fire Department are supplied with three 20-foot sections—60 feet having proved ample for most of its power ventilating jobs.

Natural ventilation proving insufficient, mechanical ventilation was attempted, two smoke ejectors being placed in operation. One appliance was located at one of the openings to pull out the heavy smoke, and the other was operated inside the structure to blow out the smoke and gases. This operation took place at the rear of the lines working in the cellar. The smoke-ejector in this area was located inside, about 150 ft., and was hooked up to one of the fire department generators. The difficulty encountered in this operation was one that was pretty hard to control. In the heavy smoke, the firemen kept kicking the wire around and it became lost in the darkness several times. While it operated, however, it shoved the smoke ahead and the men made good progress, according to Chief Collins.

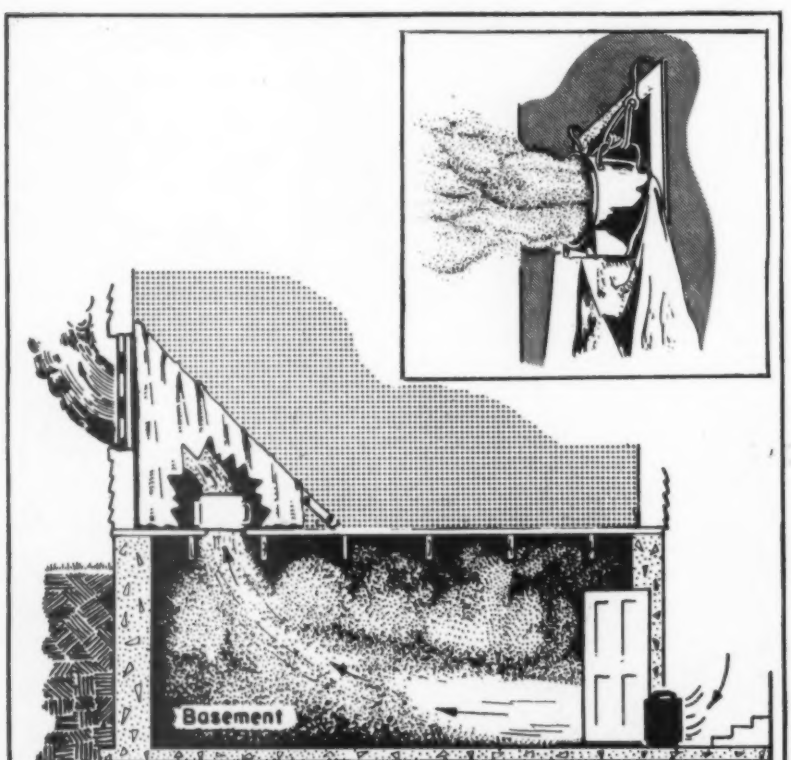
The combination of masks and smoke removers enabled fire fighters finally to reach the fire and extinguish it before it involved the entire building. It was a two-hour battle. In all, the department used eight 2½-in. lines with fog or all-purpose nozzles, and four 1½-in. lines with all-purpose nozzles.

Chief Collins summed it this way: This job proved that with proper training, and adequate mechanical devices, a department can press the attack on a stubborn, smoky fire, without a single man being overcome by smoke or heat.



Diagrams courtesy Emerson Electric Mfg. Co.

Fans can be used to introduce fresh air into smoke-charged or otherwise contaminated areas, driving out the impure atmosphere (left) or to exhaust the heat, smoke and gases, while pulling in purer air, as in sketch (right). The success of these operations depends upon (1) placement of fans, (2) lateral openings, (3) closing of overhead openings and (4) direction and force of wind.



Courtesy Super-Vacuum Mfg. Co.

Placing the ejector as high as possible helps clear the hot lighter-than-air smoke and gas. This ejector is held in place by two hooks and ropes looped through the handles. The canvas tacked over the lower part of the door prevents entry of air (top sketch).

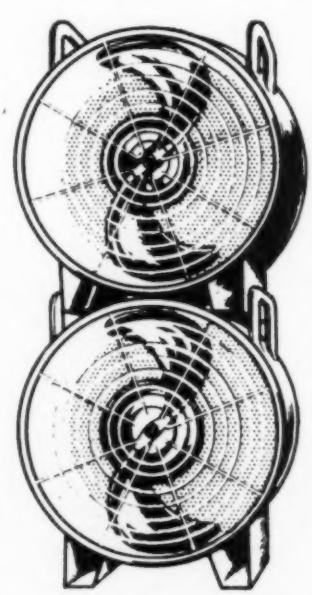
Bottom sketch: Fighting fires in blind basements is often hampered by congested smoke which reduces visibility to zero. A good solution to this problem is to place a smoke ejector in the doorway or other opening, forcing the smoke to the other end where a hole can be cut in the ground floor. Another smoke ejector placed over this hole draws the smoke. By propping a ladder from the smoke ejector to the top of a window and throwing a salvage cover over the ladder, a tunnel is formed through which the smoke is ejected from the building quickly, thus facilitating the firemen's work.

Case History—Chicago Tunnel

A fire captain and three members of the Chicago Fire Department, and seven workmen, lost their lives in a fire that started in an incompleted section of the Sanitary District Sewer Tunnel in Chicago on April 13, 1931. Sixteen entombed firemen and workmen were saved largely through the use of a smoke ejector rushed to the scene from the plant of Peter Pirsch & Sons Co., Kenosha, Wis., 60 miles away.

The detailed report of this episode was given by then Chief Fire Marshal Michael J. Corrigan (now Fire Commissioner) of the Chicago Fire Department before the 1931 Convention of the International Association of Fire Chiefs.

The cause of the fire was never determined but the flames, confined in the underground passages, created dense clouds of smoke and toxic gases, which enveloped the workmen and rescuers who went down later. The concentra-



Courtesy Super-Vacuum Mfg. Co.

The sturdy housings of these smoke ejectors are so constructed that they can be securely nested for fast removal of particularly dense smoke or for faster clearing of large buildings. When stacking two or three ejectors, a ladder strap is sometimes passed through the handles to further steady the units.

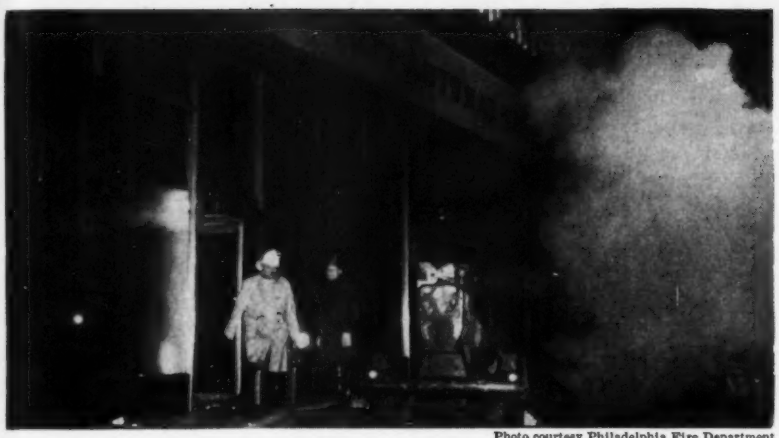


Photo courtesy Philadelphia Fire Department

The Philadelphia Fire Department used this heavy duty 6100 CFM trailer smoke ejector at the stubborn Sun Ray Drug Store, Reading Terminal fire, January 3, 1954, to pull fumes and smoke through Market street sidewalk opening, permitting men to advance lines in sub-surface areas. Fire Chief George Hink is shown at left.

tion of heat, smoke and gases prevented thorough underground search. It melted the rubber clothing and burned the air hose of a marine diver sent down to do rescue work. Firemen equipped with breathing apparatus (not presently on the market) were hampered by heat and darkness and many were overcome in the long gruelling struggle to reach the fire, and to locate victims.

At the time of the fire, about 60 workmen were in the tunnel. It is said laborers wasted valuable time attempting to extinguish the fire. It was about 45 minutes after the fire started that the fire department was called. This was at 6:43 P.M., and Engine 23 and Ladder 14 and the Chief of the 8th Battalion (Thomas Geary) responded. The Chief and four members of Engine 23 and Captain James O'Neill and members of Ladder 14 entered the tunnel with hand pumps. The superintendent of the construction company and six men also re-entered the tunnel, 37 feet below street level, to shore up the shaft and prevent sagging and possible breaking of a 30-inch gas line. Two overcome workmen were removed by members of Ladder 14 but the fire could not be located, and at 6:50 P.M. Chief Geary summoned a rescue squad.

Hand pumps proving ineffective, firemen were ordered to the surface. All reached the surface except Lieut. John Geary of Rescue 2, who had remained to direct firemen to the location of the fire. The Chief, Captain O'Neill and crew of Ladder 14 re-entered the tunnel after about 25 minutes in an effort to get through the east airlock to order out everyone in the tunnel, but they could not make it and returned to the surface, whereupon Chief Geary called for additional squads. He was then overcome by exhaustion.

At 8:17 P.M., Squads 1 and 8, Ambulance 2 and Division Marshal Patrick Pierce were dispatched. The Marshal met Lieut. Geary who had just come from the tunnel and was informed the fire was still burning. At this point the Marshal, Lieut. Geary, Lieut. Daly and two members of Squad 8 and Act. Lieut. Leo McCurrie in charge of Squad 1 descended into the tunnel leaving other firemen at topside being fitted to masks.

About 8:35 P.M., Chief Fire Marshal Corrigan picked up news of the incident on his car radio and responded. He was told about the men who had entered the tunnel and that it was feared something had happened to them. Captain O'Neill and Fireman Fitzgerald (of Squad 8) had donned masks and entered the tunnel attempting to locate Marshal Pierce and the missing firemen.

Chief Corrigan immediately ordered everyone out of the tunnel and ordered more men, equipped with masks, to try to locate Marshal Pierce. These men could not make it. Additional squad and ladder companies, ambulances and floodlight equipment, and later on an air compressor, were then called. Rescue squads were ordered to wear masks and life lines. They were organized in groups of three men each. Part of the head house and engine house were removed to improve ventilation and compressed air lines stretched from the department's air compressor to blow the smoke and heat away from men operating cages. Soon after this victims began to be recovered.

First aid and artificial respiration were applied and those requiring hospitalization sent to various hospitals. The work of the rescuers, however, grew heavier and firemen became exhausted. Calls for more help were sent. A messenger service was set up to replenish the supplies of oxygen and other necessities for gas masks and inhalators. Between 10:00 and 11:00 P.M., efforts were started to dig two shafts for the purpose of reaching men who might be trapped in certain headings. By the time both shafts were completed, however, digging was discontinued because all bodies had been recovered.

At 11:00 P.M., Chief Fire Marshal Corrigan ordered the Fire Alarm Office to get in telephone communication with Peter Pirsch of Kenosha, Wis., who designed and was experimenting with a mechanical smoke ejector. It was learned that the apparatus was not in serviceable condition, without wheels, the motor needed adjustment and flexible suction tubes lacked fitted connections. Mr. Pirsch estimated it would require from four to five hours to place the unit in condition and possibly two hours more to drive it to Chicago and he would inform Chicago when he was leaving.

About 2:30 A.M., after countless unsuccessful trips had been made into the tunnel by firemen, a professional marine diver was secured and he attempted to enter the tunnel, but was turned back by the heat.

About this time the Coroner requested that no more men be sent into the tunnel as he feared all were dead who were imprisoned there. Chief Marshal Corrigan, however, was not disposed to abandon rescue work and more attempts were made by fire fighters. About daybreak the bodies of Fireman William Karstens and a workman were found and removed. Efforts were concentrated on reducing the intense heat of the tunnel. A 36-foot ladder was lowered in the shaft and a fireman with mask and 2½-inch line and 1¼-in. nozzle lowered to the tunnel. This operation proved unsuccessful because the seat of the fire was not discernible.

Afterwards, a 36-foot ladder was rigged with an aerial pipe and placed in position to operate as a sort of cellar pipe, but after 15 minutes operation this was discontinued. The fire continued to

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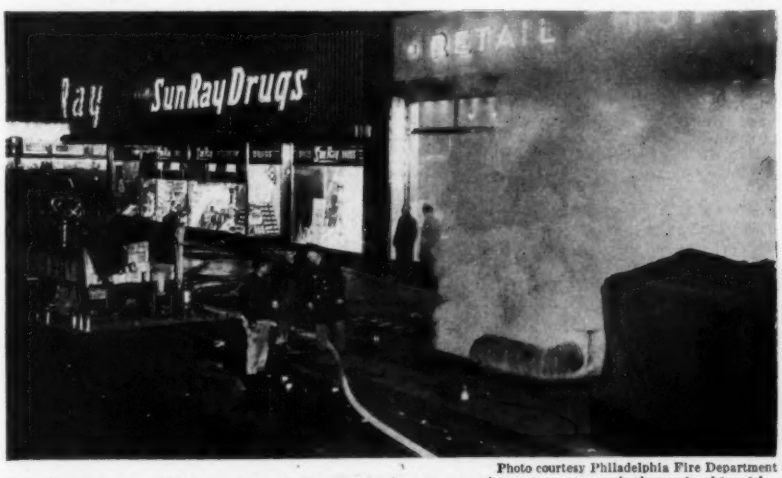


Photo courtesy Philadelphia Fire Department

Gasoline-driven portable smoke ejectors and electric circulators were used through this sidewalk and floor openings to rid heavily charged sub-surface areas of the huge Reading Terminal Building of noxious smoke and gases in fire of January 3, 1954.

DESIGN OF MILITARY FIRE TRUCKS POSES SEVERAL NOVEL PROBLEMS

Winterization, Adequate Power, Speed All Considered as Essential Features

By T. B. Edwards

Ch., Fire Fighting Branch
Engineer Research & Development Laboratories
Fort Belvoir, Va.

WITH the increasing use of atomic bombs, multiple incendiary attacks, flame throwers, and other flame-producing weapons, it is evident that fire, as a weapon of modern warfare, has achieved an importance transcending even that which it held in ancient times. In addition, the use of new devices, i.e., guided missiles, and the increasing reliance on liquid fuels in all phases of military operations have greatly increased the hazard and impact of accidental fires. One phase in the over-all defense against fire involves the use of fire extinguishing equipment of which perhaps the most important single item is the powered pumper fire truck.

Prior to World War I, the military establishment had little fire fighting equipment, and that which it had was homemade, or standard commercial equipment procured locally by individual posts.

During World War I the need for fire fighting equipment became more apparent. After the war an organization was set up at the Holabird Quartermaster Depot to manufacture fire trucks for the Army using surplus World War I truck chasses as the basic elements. The chasses were modified to include the use of new larger engines and transmissions, the replacement of solid tires with pneumatic, and the addition of pumps, fire fighting equipment and bodies. These trucks were the equal of the then current commercial municipal pumper trucks and supplied the Army's needs for posts, camps and stations between the two World Wars.

The advent of World War II created a demand for large numbers of fire trucks in the theaters of operations. No fire truck for this purpose had been developed. This demand could not be met by existing supply sources, including manufacturers of commercial fire apparatus. To meet the need, available commercial 1½ ton 4x2 chasses were procured and fitted with front-mounted fire pumps, water tanks, fire fighting accessories and fire truck bodies to convert them into light fire trucks. Several thousand of these trucks (Class 325) were sent to the various theaters of operation (Fig 1).

Figure 1. Fire Truck Class 325

Figure 2. Fire Truck Class 530

In use, these trucks were found to be subject to the following major deficiencies:

a. They lacked mobility, so that in many cases they were unable to reach the fire.

b. Water tank capacity of 300 gallons, and pump capacity of 300 gpm was insufficient.

c. The presence of several different makes of trucks complicated the supply problem.

d. They lacked sufficient power for adequate acceleration and speed.

e. The makeshift drive from the front of the engine crankshaft was unreliable and required considerable maintenance.

f. Pump speed and power requirements were too large for the truck, resulting in high engine maintenance.

In the early part of the war, responsibility for fire fighting equipment was transferred to the Corps of Engineers. In response to demands from the field, a modified truck, Class 530, using a larger (500 gpm) pump and a 600 gal. water tank on a standard military GMC 6x6 chassis was developed first as a kit for field conversion and finally as a complete vehicle (Fig. 2). About thirty of these vehicles were completed near the end of the war.

This vehicle, while overcoming the greatest deficiencies in mobility and pump and tank capacities of the previous trucks, was still woefully deficient in power and speed, particularly on grades, and moreover was entirely unsuited for use under arctic conditions, the need for which was becoming apparent. Tests conducted with winterization kits applied to existing fire trucks indicated that effective kits interfered with the operation of the fire fighting equipment and were cumbersome and difficult to install. However, the tests were valuable in determining the type of heaters, and other equipment, suitable for this service.

It was concluded that requirements for satisfactory operation in the arctic could be met only by designing the vehicle for this purpose from the start with insulated components, space for heaters, and other special provisions. In addition, it was considered necessary to protect the crew from the cold when going to the fire.

The increasing hazard of liquid fuel fires and the determination that protein air foam was the best agent for large scale fires of this type indicated that fire trucks should have adequate provisions for this agent. Fire trucks used in the theater of operations cannot depend upon water supply adjacent to the fire as can municipal trucks. Water mains and hydrants are usually not available, and in general, the truck will have to depend on its own water supply for fighting most fires. The amount of water carried should, of course, be as large as possible but this is definitely limited by the weight carrying capacity of the truck. Experience indicated that 750 to 1000 gals. would suffice for most conditions.

Use of the tracklaying type vehicle as a fire truck was investigated and a prototype model partially constructed. It was abandoned, however, as it became apparent that this type was of little merit due principally to the great weight of vehicle required for a moderate payload, its slow speed and acceleration, and the general complexity and high maintenance of its drive mechanism.

A fire truck should have speed and

agility as well as off-road mobility so that it can get to the fire in the shortest possible time. The sooner the truck gets there the smaller the fire and the better the chance of success; in this, minutes and even seconds count. A vehicle which crawls up a slight grade at 7-10 mph or cross-country at 5 mph is not satisfactory as a fire truck. Performance equal to that of municipal fire trucks is desirable. A study was undertaken to determine if a truck meeting these general requirements could be developed, as no standard commercial equipment was available.

These desired characteristics can be summarized in more detail as follows:

a. Off-road mobility at least equal to the best military wheeled vehicles.

b. Tire ground pressure 40 psi maximum.

c. 60 mph top speed and 40 mph up a 5% grade (average municipal fire truck performance).

d. Completely enclosed heated cab for crew of six (6) men.

e. 750 gal. water tank and 150 gal. foam tank and foam generating equipment.

f. Pumping capacity of 500 gpm at 125 psi, with characteristics that can give 800 psi at 50 gpm for high pressure water fog. Pump driven from main engine through suitable gearing.

g. Complete winterization, inasmuch as suitably heated shelters for fire trucks could not be assumed to be available in most cases and in any case the truck would have to operate outdoors.

h. Provision for suction hose, 1000 ft. of 2½" discharge hose, two hose reels, each with 150 ft. of high pressure hose and all standard fire fighting accessories.

i. Protection of all equipment in enclosed, heated, insulated compartments, heat to be supplied by an automatic, gasoline-fired, electrically-controlled coolant heater with provision for preventing discharge of the battery by supply of power from any separate, 110 volt, AC source. Truck to be operable from —65°F to 125° F.

j. Maximum weight fully loaded, 32,000 lbs.

To meet these requirements, a 300 hp engine was indicated and since reasonably reliable operation is needed, a conservative rating was chosen. It was realized that, with this large engine mounted in front of the dash in the conventional location, the driver's visibility would be so restricted as to render high speed operation dangerous.

There are four other possible arrangements, each of which was studied.

a. CAB OVER ENGINE. With these large engines, in order to keep the height to a reasonable figure, it is necessary to have the engine in the cab. In addition to cramping the driver and other occupants of the cab and making routine maintenance of the engine difficult, it presents the hazard of leakage of engine fumes into the cab, a condition which would be very objectionable in arctic operation.

b. ENGINE BACK OF CAB. This arrangement results in poor space utilization, as, in order to provide access to the engine, the entire width of the center part of the truck, the best location for the heavy water tank, is taken up by empty space. This arrangement also presents difficulties in connection with the pump drive. It would definitely increase the length and weight of the truck.

c. HORIZONTAL ENGINE IN CENTER BELOW FLOOR. The necessary engines could be obtained but poor accessibility (since the engine would be under the water tank), difficulty with frame design, and the complicated gearing necessary for a multiple wheel drive made this arrangement impracticable.

d. ENGINE IN REAR. The engine could be located under the hose bed, would be accessible from both sides, and would be readily removable. Space utilization and weight distribution were far superior to the other arrangements and it had no apparent disadvantages other than novelty. This was the design chosen.

Considerable study was given to the wheel arrangement and the four-wheel drive chosen as giving the best load distribution and providing the largest diameter tires which, experience showed, was an advantage in rough terrain, particularly when coupled with self-locking differentials.

Figure 3 shows the general arrangement of the prototype model (designated Class 540) designed to meet these requirements as manufactured by the Walter Motor Truck Company. As can be seen, the visibility is very good. The truck has an all-aluminum frame which is integral with the body, giving a very rigid construction. The entire truck can be lifted by four eyes on the roof as shown. The windshield is made of electrically conductive heated glass which is a new development for defrosting. This prototype model is powered by a Hall Scott 6 cylinder, 5¾"x7", liquid-cooled 300 HP gasoline engine driving all four wheels through a torque converter and a three speed transmission. Three self-locking differentials are provided; one between the front and rear axles and one each between the right and left wheels so that positive traction on all four wheels is always provided. The axles are of unique double reduction design in which the bevel gear first reduction is spring-supported on the frame. Air operated disc brakes are provided at this location and final drive to the wheels is by means of short universal jointed shafts to a final internal spur gear drive within each wheel. This design is somewhat similar to the DeDion Bouton drive used on racing cars. It has the advantage of reducing the load on drive parts to about ¼th of the wheel load and reducing the unsprung weight. The transmission arrangement is such that the transfer case, used with other multiple wheel

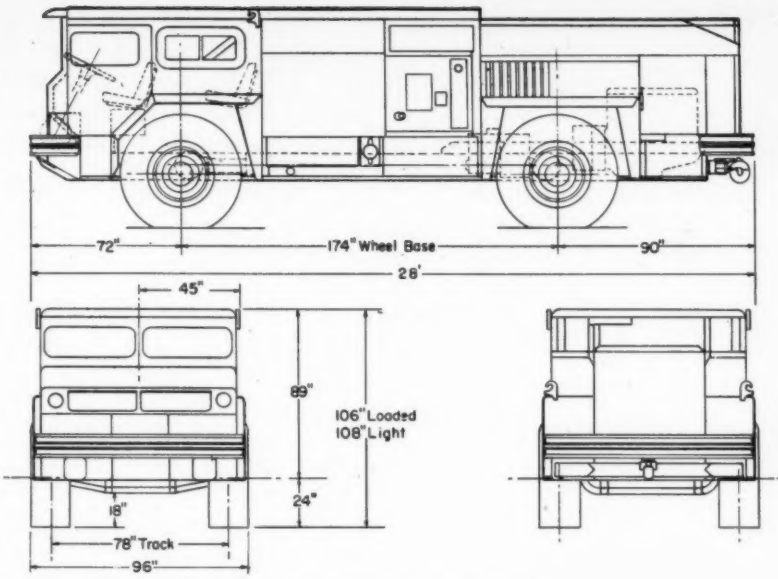


Figure 3. Fire Truck Class 540

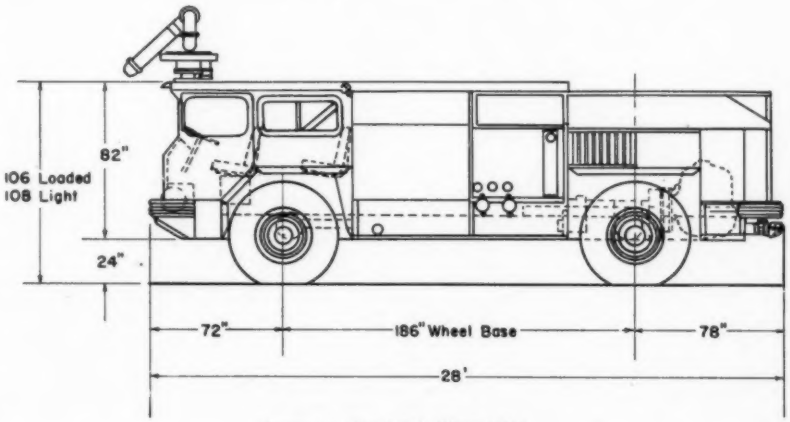


Figure 4. Fire Truck Class 1500

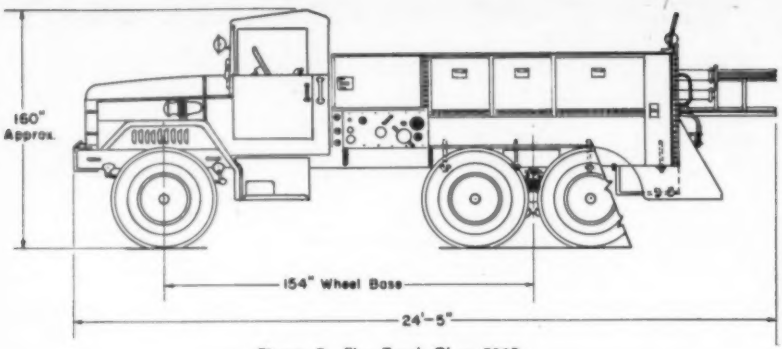


Figure 5. Fire Truck Class 530B

drives, is eliminated. The 6000 rpm centrifugal pump is driven through step-up gears from the torque converter. A new type of automatic foam proportioner incorporating a separate foam pump and a balanced metering valve and orifice control is provided.

Tests of this truck began at Aberdeen Proving Grounds in June 1954.

To meet the hazards associated with new type weapons, a truck with a much larger pumping capacity was required and, accordingly, a second prototype is being built, as shown in Figure 4. This truck is very similar to the first, except that a 1500 gpm pump and a 1000 gal. water tank are provided and an electric remote controlled turret nozzle designed and built by the Engineer Research and Development Laboratories is mounted on the roof as shown. The truck is powered by a LeRoi, 8 cylinder, V type, 5¼"x4⅞", 300 HP engine and will be designated Class 1500.

To provide a vehicle for use in the interim while the above trucks were being developed, and since chasses for the World War II Class 530 trucks were no longer available, the original components of this truck were adapted to the new Ordnance M-46 chassis.

In order to secure better truck performance the water tank capacity was reduced to 400 gallons. This truck was designated Class 530A and several hundred have been procured since World War II. Since the front mounted pump of the 530A could not be winterized and the design of the power drive of the M 46 chassis (unlike the World War II GMC chassis) permitted the use of a midship mounted pump, tests on this type of pump were conducted and a new design of truck prepared which will have the same performance characteristics as the Class 530 A but will include provision for winterization made possible by the new pump location. This truck designated Class 530 B is shown on Fig. 5. These are now in quantity procurement and have replaced the Class 530 A.

Matches Campaign for Fire Prevention

Although the young women affiliated with the Spring Branch (Texas) Volunteer Fire Department are quite aware that it's dangerous to play with matches, they recently had a job of striking some 7,000 of them.

The striking and the scratching was all in the interest of the $50,000 fund-raising drive of the Spring Branch vamps to finance a new fire house.

Seems the necessary widening of the Katy road on which their old station was located called for removal of the old fire quarters. Thereupon the volunteers set their sights on a spanking new station.

As an interest-getting device in their promotional campaign, the vamps sent out 7,000 solicitation letters, each containing a match and the heading: "This match carelessly used could have burned down your house."

Inasmuch as live matches cannot be sent throuh the mails, the ladies' job was to strike them first. And 7,000 matches represented considerable strike!

Fireworks Start Destructive Blaze

The hazards inherent in fireworks have long been recognized, yet they continue to be a perennial problem, and each year the days before Independence Day bring a rash of fires in which fireworks play a part. Some such fires merely destroy the small stand built for the express purpose of selling fireworks. Here there is little property loss beyond the fireworks stand and its hazardous merchandise, and anyone embarking on such an enterprise as selling fireworks must realize and assume that risk.

When there is destruction of property other than the fireworks stand, losses become large, and there may be the many indirect losses incident to interruption of a business. Such was the case in a fire which occurred in the Ivywild-Cheyenne Canon Fire Protection District, near Colorado Springs, Colorado. This district was formed in 1950 and a volunteer fire department organized. A surplus army triple combination was purchased, having an American La-France 500 gpm midships pump and hose body mounted on a Ford chassis. It carries a 150 gallon booster tank, 1,200 feet of 2½ and 400 feet of 1½ inch hose, and the customary small tools. Under the direction of Chief Victor Maze and Assistant Chief Julius Ryter, a training program was set up and the volunteers have frequent sessions of both skull practice and actual drill, producing a well trained volunteer group.

Peck's House and Garden Spot, near the corner of Mesita Road and Brookside, was completed and opened for business in June, 1953. It was housed in an attractive one story frame building with full basement. The structure was 24 feet wide by 100 feet long, with 24 foot wide wings on each side at the rear to make a T-shaped building. Contents included furniture, garden equipment, power mowers, pet supplies, and allied items.

About 20 feet inside the front entrance a fireworks counter was set up, and it was here that fire started shortly after 2 P.M., on Sunday, June 27, 1954. The owner, Robert Peck, was in the office at the rear. He emptied the contents of a soda and acid extinguisher on the rapidly spreading blaze without retarding its progress, then barely had time to telephone the Ivywild-Cheyenne Canon Volunteer Fire Department before he made his escape from the building.

That department responded and laid one line of 2½-inch hose from the nearest hydrant to the fire. The pumper was connected to the hydrant and operated at 190 psi to supply the pressure needed to move water through the 900 foot line of hose. Two lines of 1½-inch hose were led off from a gated wye, and these

Photo by Dr. L. L. Williams

Volunteers wet down after fire in "House and Garden Spot," near Colorado Springs, Colo. Blaze was started in a display of fireworks. Note legend on poster at right: "Beautiful Fireworks —No Noise."

lines, with fog nozzles, were used to fight the fire. When firemen first started to work, the interior of the building was completely involved by fire, and as the first water hit the counter of fireworks, there was a minor explosion, which forced the volunteers away from the building. Despite the efforts of the fire fighters the building was a total loss, with the first floor collapsing into the basement, destroying everything there. Total loss was estimated at $50,000.

LESTER L. WILLIAMS, M.D.

Apartment Leveled by Jersey Shore Fire

The Jersey Shore area saw one of the largest concentrations of fire apparatus on May 21, when an early morning fire wiped out the beachfront Loch Arbour Apartments and wrecked or damaged three adjoining buildings, causing a reported loss of $550,000.

More than 50 persons, many of them sent into the streets in their nightclothes, barely managed to escape the fast-moving flames. The apartment building, a four-story stucco-covered frame structure, housed 30 families, and stood on the beachfront just north of the Asbury Park city line. Loch Arbour, a small community in Ocean Township, is the township's only beachfront area.

More than two dozen fire companies responded to a general alarm sounded through the Monmouth County Police Radio, KEA-317. Apparatus from as far north as Keyport, 20 miles north, sped to the scene.

The fire, which started in the Loch Arbour Baths pavilion, spread rapidly to engulf the pavilion, 750 bath houses, a restaurant, and a storage building. Flames leaped more than 50 feet into the air, sending up a glare that could be seen more 10 miles away.

Luckily, the apartment building was situated near Deal Lake, a large body of water separating Asbury Park and Loch Arbour. Fire companies soon were drafting water from the lake, and at one time 12 pumpers were lined up on the banks of the lake, sending more than 36 lines of hose to deck pipes, hand lines, and ladder pipes.

The Marine Grill, a large beachfront restaurant immediately to the south of the apartments, was scorched and damaged by smoke, but firemen, directing streams of water on the place, kept it from catching fire. The Monte Carlo Pool, in Asbury Park, suffered minor damage when a shower of sparks from the blaze covered the area, touching off a blaze in the pool storage rooms.

Flames from the burning pavilion had already touched off the roof of the apartment building when the first police and firemen arrived.

State Police Sgt. Joseph McCormack, who resided in the Loch Arbour Apartments, said he first noted the fire when he saw sparks dropping past his window, apparently from the burning roof. He rushed through the building warning the occupants, and was joined in this by Mrs. Irene Mauch, a tenant, and Cyrus Rice, building superintendent. Police and fire officials credit them with preventing possible loss of life, so quick was the fire's spread.

Embers from the blaze, driven by an 18-mile-an-hour wind, showered the area four blocks to the south and for a time threatened Asbury Park's hotel area. The entire Asbury Park fire department, the Shore's only paid unit, worked solely at protecting the Marine Grill, Eighth Avenue Pavilion, Monte Carlo Pool, and the boardwalk and hotel area, all of which were threatened by the showering sparks.

Allenhurst Fire Chief George Cook, in charge of operations, called for aid under the county's mutual aid system on his arrival, and at 1:34, about a half-hour after the first alarm, issued a general alarm, calling the widespread aid.

Several firemen suffered minor injuries at the scene, and were treated by first aid units standing by.

The Monmouth County Red Cross, under Everett Rudloff, county Red Cross official, immediately set plans into motion to care for the families made homeless by the fire. Mr. Rudloff is station director of WJLK, in Asbury Park, which broadcast descriptions and interviews from the scene.

After an investigation the following morning, Chief Cook indicated that he felt it would be "almost impossible" to determine the cause of the blaze.

Working with Chief Cook in directing the hundreds of firemen was Chief Michael J. Ryan, Asbury Park, and his staff.

While the rapid spread of the blaze and wind made even the large number of hose lines ineffective, both Chief Cook and Chief Ryan said that it was only the fact that the lake was nearby to supply pumpers that held the blaze from spreading to the Asbury Park beachfront area.

Fire officials from all departments agreed that no Jersey Shore community could support anywhere near that number of pumpers at any fire scene.

In fact, Asbury Park, Neptune, and Ocean Grove departments had been holding relay drills only the week before the Loch Arbour blaze.

CHIEF FRANK L. WILGUS,
Ocean Grove, N. J.

Jersey Shore fire at its height. A score of companies united to bring the fire under control.

Ladder pipes were used to good effect in subduing the Jersey Shore fire.

View of burning cotton in Planters' Warehouse.

Volunteers Fight Cotton Fire

Cotton fires are not strangers to Southern fire departments, which treat them with healthy respect. This is an account of what might be called a typical such fire, except that it was fought entirely by volunteers, of the Dunn, N. C., Fire Department, and it threatened to develop into a serious conflagration.

The Dunn organization comprises 20 men and four officers with the following equipment: one 1942 Mack "80" 750 GPM pumper; one 1950 Mack "85" 750 GPM pumper, and one 1952 FWD, 750 GPM pumper for low pressure pumping. This unit is also equipped with Myers H.P. pump and high pressure nozzles. All trucks are of triple combination type, having complement of hose and ladders, and each has a bootser tank of 750 gal. capacity, or larger.

The department is supplemented by an auxiliary which is used as a training unit for prospective members of the regular department. The auxiliaries serve with the department to fight fires, while receiving training. As a vacancy among the regulars occurs, the most likely candidate is elected from the auxiliary to fill that vacancy. Thus a fully trained man is added to the department and those on the auxiliary force are qualified to assist in fire duty.

The department and the auxiliary force are divided into three companies. Manpower may be shifted from one unit to another as needed on the fire ground, when all units are not engaged.

The fire in question occurred in the Growers Tobacco Sales Warehouse, So. Clinton Avenue, Dunn, an ironclad building on wood framing, built-up roof and cement floor. Floor space was about 60,000 sq. ft., the building being 100 ft. wide by 600 ft. long. Stored in the structure were a total of 2,420 bales of cotton. The building was owned by the Tart-Edgerton Realty Co. and occupied by the Matthews Cotton Co. for storage of cotton. Some 60 ft. south of this building is located the Planters Tobacco Sales Warehouse of the same type construction, with about 100,000 sq. ft. of floor space, dimensions being 180 ft. by 540 feet length. This building contained about 3,000 bales of cotton. About 15 feet to the north of the Growers Warehouse was a masonry building having 40,000 sq. ft. of floor space, unoccupied at the time of the fire, but formerly an auto sales agency, and garage.

About 40 feet north of this latter structure was a small masonry building housing a cafe and quick lunch, and north of this was a number of large frame and masonry buildings all attached in a single line, having miscellaneous occupancies. This group had a frontage of about 350 feet, facing So. Clinton Avenue.

The Planters Warehouse is valued at $100,000 with contents at $500,000; Growers Warehouse is valued at $60,000 with contents at $410,000; the motors building at $50,000 (no contents); the small cafe is valued at $4,500 with contents at $5,000 and the line of buildings are valued at about $350,000 (buildings and contents).

Rain fell on the afternoon of April 16th last, and there had been intense lightning; wind was about 35 MPH from the south. At 5:45 P.M. there was a terrific bolt of lightning and an observer across the street from the Growers Warehouse traced its flash to the building, the bolt hitting at about the center, and immediately smoke began to come from the structure from one end to the other. The observer, a woman, called to a policeman nearby to turn in a fire alarm, which he did by telephone.

The call was received by the department at 5:48 P.M. and within three minutes the firemen were at the scene, to encounter smoke so dense that apparatus drivers had difficulty in getting through to the south side of the fire in order to attack with the wind behind them. By this time the roof of the motors company building was already afire.

Two pumpers immediately stretched in to the fire; the "80" was placed in operation on the south side of Growers Warehouse and the "85" was sent back to the north to hook up and operate on that side. Very soon the radiated heat from the Growers Warehouse was such as to prevent men from passing between the Growers Warehouse and the Planters.

As soon as this situation developed, the FWD unit was sent right inside the Planter's Warehouse to control the spread of fire in this building. This piece and its crew remained inside the building, using the high pressure from its 1,000 gal. booster tank, to prevent extension of the blaze to the structure. Aided somewhat by the wind, which was blowing away from the property, they were successful in this task.

Hose lines were stretched from the "80" and operated on the south side and front of the Growers Warehouse. Lines were laid from the "85" and played on the north and front side of the building, and on the roof and side of the motor building. However, it was soon found that the latter could not be saved because of lack of available water. These crews were then pulled back and a defense set up at the cafe building. Here the fire was stopped before it could communicate to the long line of occupancies north of the cafe.

The fire was under control at 10:00 P.M. after completely destroying the Growers Warehouse and garage building. By this time firemen were able to operate between the Growers and Planters Warehouses and knock down the fire in the baled cotton. The danger of further spread was over. Six 2½-in. and four 1½-in. hose lines were operated to control the fire, a total of 3,200 feet of hose being used.

By 2:00 A.M. all but two firemen and a crew of laborers were able to return to quarters. The "85" was left coupled to its hydrant, with two 2½-in. and four 1½-in. lines in readiness for further use. This unit remained at the fire until noon of April 18th by which time salvage crews of the professional salvage service were on the scene and the pumper was no longer needed to control smoldering fires.

The fire losses were estimated at $520,000. Salvage in the amount of $20,000 was accomplished but reclamation was low due to the method of storing the cotton five bales high in lots of 100 bales providing plenty of draft for the fire between piles. The heat prevented firemen from getting close enough to the bales to break them out and wet them down.

Every regular and auxiliary fireman required treatment for burns from exposure to the intense heat and irritation of the eyes.

Georgia Arson School

The first annual School for Arson Investigators was held in Atlanta, Ga. on June 7 and 8 under the auspices of the Georgia State Fire College and the Atlanta Fire Department. It was attended by about fifty fire officers from throughout the state, who pronounced it a decided success.

The school was organized by Harry Phillips, Director of the State Fire College and retired Atlanta Fire Marshal, and Lt. Roy Parker, who is Arson Investigator for the Atlanta Fire Department. Lt. Parker served as Chairman.

All aspects of arson investigation and prosecution were dealt with by nine speakers, experts in their fields. Several films on the subject were also presented.

The speakers were: H. M. Davis, and C. M. Huguley, Jr., Special Agents for the N.B.F.U.; Lucius Vaughn, State Fire Marshal's Office; J. H. Clark, National Automobile Theft Bureau; George Cornett, head of the Photographic Department of the Atlanta Police Dept.; L. W. Clyburn, Jr., Special Investigator of the Fulton County Solicitor General's Office; Paul Schoffett, Assistant Director of the Georgia Crime Laboratory; Capt. Ben Seabrooks, head of the Dept. of Identification of the Atlanta Police Dept.; and the Hon. Jesse Wood, Judge of the Fulton County Criminal Court.

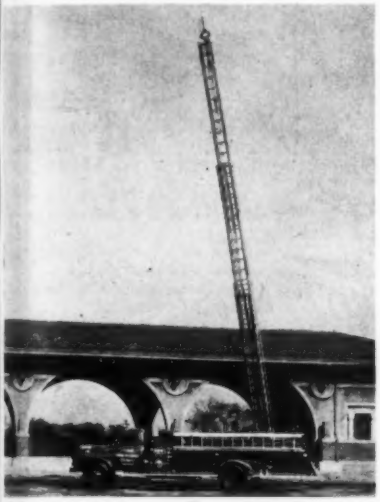
It is planned to make the Arson School an annual affair for arson investigators from Georgia and neighboring states.

SIDNEY B. JEWETT

New Combination Truck for Thibodaux, La.

The Thibodaux Fire Department, Thibodaux, La., has recently placed in service a pumper combination of not only standard pumping facilities, but also equipped for high pressure; a ladder truck combination of ground ladders and power-operated all-metal extension.

The unit was built by W. S. Darley & Co.



New unit recently added to Thibodaux, La., Fire Department

It is equipped with a midship three-stage centrifugal pump, and has four pre-connected lines, two being 1-inch high pressure booster lines with Hardie-Fox guns, and two being 1½-inch lines with Elkart Mystery nozzles.

The truck also carries a 300-gallon booster tank for initial operation, the booster section being equipped with clapper valve in order to permit uninterrupted operation after a hydrant feeder line is attached. All of the controls for the four pre-connected lines are on the operator's panel to simplify operation. The pump, naturally, can be used with heavy lines should the occasion demand.

A Monarch ladder pipe is included with the unit for use on the aerial ladder, if desired, at an elevation of 40 feet, using either 1⅛, 1¼ or 1½-inch tips. The fixed aerial ladder is Memco, all-metal, electrically operated. Also carried is a three-section metal 45-foot portable, a two section 24-foot; a straight 16-foot, and a 10-foot folding ladder—all of metal.

According to Clarence J. Riviere, Director of Training of the Department, the personnel are very pleased with their new acquisition.

Revised Edition of U. S. Navy Structural Fire-Fighting Manual

The U. S. Navy has issued the first revised edition of its U. S. Structural Fire Fighting Manual, originally published in January, 1947. It is known as "OPNAV INSTRUCTION 5560.7" and dated 1953.

The Manual is not available for distribution through the Navy, but copies may be secured at a cost of $1.50 each from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

The Manual consists of 122 pages and hard cover (loose-leaf binding), size 8 in. by 10½ in. There are seven Chapters, and numerous illustrations from photographs.

Chapter I includes the introduction and explains the purposes of the Manual. Chapter II discusses training methods and aids. Chapter III is devoted to minor fire extinguishment and first-aid extinguishers; electric light equipment; fire fighting tools; ropes and knots; breathing apparatus and gas masks. In Chapter IV the question of hydrants and hose and hose appliances is discussed. Chapter V goes at length into engine company basic operations and hose layouts. The entire Chapter VI is given over to the handling and testing of ladders. Chapter VII covers salvage in all its ramifications.

Electric Arc Starts Fire

On Feb. 10, 1954, at 10:45 P.M., the Raritan, N.J. Arsenal Fire Department was notified of a fire on top of a six-foot clothes locker in Building S-4 (Vehicle Rebuild Shop).

The Fire Warden of the building extinguished the fire with an extinguisher, after sending in the alarm. A few books, reports, blank sheets of paper, were all that burned.

Upon investigation by the Fire Department, the cause was determined as follows:

An electrical arc-welding machine, located in Building S-3, was grounded to a structural steel column. The welder's steel worktable, was in contact with a 6-inch abandoned steam line, which extended through a brick wall into adjoining building S-4. This line, in Building S-4, was above the locker. A loop, approximately three feet long, of high resistance steel wire, hung from the steam line and came in contact with a 3-inch water line. In contact with this water line was an electrical conduit, which ran from building S-4, through the wall into building S-3. It was strapped to a steel column, that was also used to ground the electrical welding machine.

When the welder started to weld, and threw his arc, he completed an electrical circuit, of 32 volts, 150 amps, which was sufficient to melt the high resistance wire at point of contact with the water line. Drops of molten wire, in turn, ignited combustible material on top of steel locker, causing fire.

CHIEF F. K. VAUGOIN

Celanese Corp. Has Trained Brigade

The Rock Hill, S. C., plant of the Celanese Corporation of America, near Charlotte. maintains what is reportedly one of the best equipped and trained industrial fire departments in the country.

The 16-man full-time department, augmented by auxiliary units for emergency duty, is headed by Fire Chief Calvin A. Williams, 10-year veteran city fire fighter and a U.S.N. firefighting instructor during World War II.

The Rock Hill force, most of them veterans, operates in shifts; men are on duty 24 hours a day. Different departments of the company have auxiliary, or departmental brigades, with men trained in modern fire fighting techniques. In addition, training in fire control is given regular plant employes, classes ranging from 10 to 40 persons being held weekly under the supervision of Chief Williams.

D. G. SPENCER

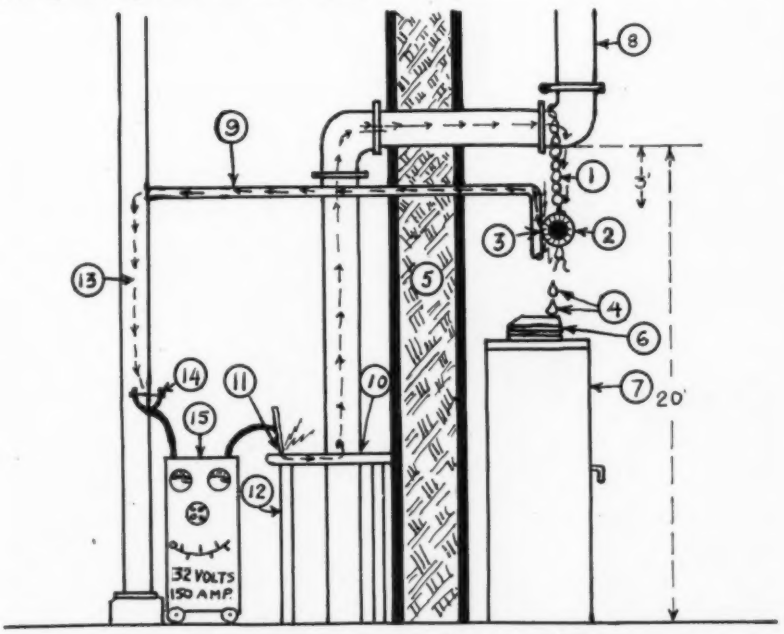


Diagram showing how electric arc started fire.

1. High resistance wire, carrying 150 AMPS.—2700 degrees F. melting point. 2. Two-inch water pipe. 3. Contact between water pipe and electric conduit. 4. Molton steel wire. 5. Twelve-inch brick wire. 6. Technical manuals and papers. 7. Steel locker. 8. Six-inch abandoned steam line. 9. Electric conduit pipe. 10. Contact between steel table and steam line. 11. Arc from electric welder to steel table. 12. Steel table. 13. Steel column. 14. Ground clamp. 15. Electric arc welder. Arrows show path of electric current.

High Pressure Aids in Fighting 12-Hour Jet Fuel Fire

An argument over the right of way between a 1954 Oldsmobile and a Santa Fe freight train ended in a spectacular fire in the small community of Highgrove, one mile North of Riverside, California in the early hours of June 18, 1954. The sedan struck a freight car in the northbound train, causing it to derail at the Center Street crossing in Highgrove. A following tank car containing ten thousand gallons of jet fuel jumped the tracks and overturned. Leaking fuel was ignited by friction before the train could be stopped. Four more cars containing another forty thousand gallons fortunately remained on the tracks.

Highgrove Station of the California Division of Forestry received the first alarm by phone and responded two blocks to the scene to be confronted with exposures valued at over $100,000. As the second-due truck from West Riverside arrived, the tank vent blew, and fuel was sprayed over considerable area. Assistant State Ranger James E. Chambers immediately radioed Perris Headquarters for additional units.

State Forestry pumpers were dispatched from Glen Avon and Sunnymead in Riverside County. Chief Ray Allen responded with a squad-truck from the City of Riverside, and March Air Force Base sent a 1,000 gallon tanker with five men. A high pressure rig and a 2,200 gallon tanker were sent from the San Bernardino County headquarters of the State Forestry with six men. The fire was confined to the tank car by use of high pressure lines with several 2½" lines laid to protect the exposures. The fire was declared out at 3:25 P.M., after a twelve hour battle.

Chronology of alarms:

0255 Report of fire received at Highgrove Station. Unit 6121 (250-gpm) 10-8 (in service) to the fire.
0258 6121 at scene requests additional assistance (radio).
0303 6131 (Asst. Rgr. Chambers) and 6125 (250gpm) 10-8 from West Riv.
0314 Additional equipment requested by 6131 (radio).
0315 RFD #230 (Chief Allen) and RFD #241 (750gpm squad) 10-8 from Central Station, City of Riverside.
0315 6242 (H.P.) 10-8 from San Bernardino.
0320 6161 (600gpm & H.P.) 10-8 from Glen Avon. Move up: Sunnymead to Highgrove, Perris to Sunnymead, Corona to West Riverside.
0330 6223 (2,200 gal. tkr.) 10-8 from San Bernardino.
0350 1.000 gal. tanker from March Air Base, 5 men 10-8.
0443 6162 (Assoc. Rgr. Banks) 10-8 from Perris Headquarters.
0530 6125, 6242, 6223 and March Air unit returned to stations.
1030 Riverside City FD units returned to station.
1130 6161 returned to Glen Avon.
1530 6121 returned to Highgrove and cover units returned to stations.

Damage: $8,515.00
Savings: $70,000.00
Officer in Chg: James E. Chambers
Dispatcher: Loren Baldwin

—Jim L. Johnson

Not as "Screwy" as They Look

In patterns like toothpaste being squeezed from tubes, foam streams are discharged from nozzles in a demonstration of the new Royal Air Force tenders at Kenley, England, last month. Contests were held between the Royal Air Force, the U. S. Air Force, the Canadian Air Force and the Royal Navy School of Aircraft Handlers.

58th Annual N.F.P.A. Meeting

The 58th Annual meeting of the National Fire Protection Association, held in Washington, D. C., May 17-21, was one of the largest and busiest in the annals of the organization.

On May 17th there were sessions of the Fire Marshals' Section, Aviation Seminar, and the general business meeting. On the 18th, meetings on Hazardous Materials and Processes; Materials Handling and Storage, and continuation of the Aviation Seminar. In the evening a demonstration of rescue and fire control was staged at the National Civil Defense Training Center, Olney, participated in by over 20 volunteer fire departments. On the 19th the program included sessions on Fire Prevention and Fire Detention and Extinguishment, with a motion picture program in the evening and trips to the FBI, Fort Belvoir and down the Potomac.

Structural Fire Safety, Industrial Fire Protection and Fire Service Activities were the general topics covered on the 20th. The volunteers had their inning in the Volunteer Firemen's Forum held on the evening of the 21st. Among those on this program was Roi B. Woolley, Assistant Editorial Director, *Fire Engineering*.

The final general session was also held on the 21st and included a number of pertinent topics. Officers nominated for the forthcoming year were: T. Seddon Duke, Star Sprinkler Company, President; John A. Neale, Chief Engineer National Board of Fire Underwriters, Vice-President; Chief Henry G. Thomas, President International Association of Fire Chiefs, Vice-President; Richard E. Vernor, manager Fire Prevention Department, Western Actuarial Bureau, Chairman of the Board.

Governor Rides Fire Truck

The limousine of Governor John Lodge, of Connecticut, broke down while he was on way to inspect the Hartford Machine Screw Company at Windsor, Conn., on June 8 and he finished the journey on a fire truck.

His car failed in front of the Wilson Fire Station. Deputy Chief Anthony Jezouit offered him a ride on the apparatus and the governor climbed into the seat beside the driver and the appointment was kept on time. At the time, Governor Lodge was accompanied by John Egan, of Bridgeport, State Labor Commissioner.

Tom Magner

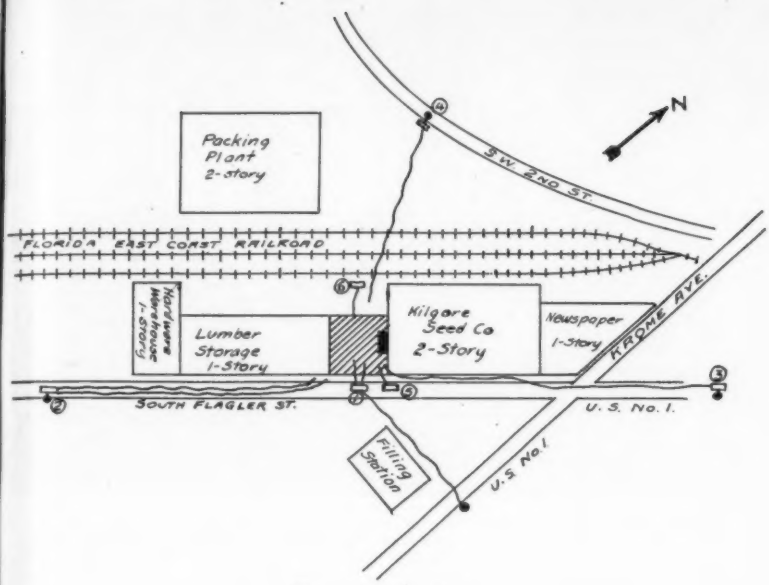


Diagram of Fire Area

Small Fire, Much Work

Lack of manpower and equipment are credited with causing a long drawn-out operation to extinguish a fire in a small building in Homestead, Florida—with loss of $11,500, when under normal conditions the blaze could have been extinguished with a booster line.

The involved building was formerly a 2-story structure of hollow tile and mill construction, covering an area 50-ft. by 50-ft. (2500 sq. ft.). The 1926 hurricane demolished the upper story and this was repeated again in 1929, after which the upper section was not reconstructed, but a roof about 30 in. above the upper floor was added. The upper flooring was tight-jointed 2-in. by 6-in. timber. Roof was 1-in. by 6-in. sheeting covered with tarpaper. This was supported by criss-crossed 2-in. by 6-in. and 1-in. by 6-in. studding and bracing 24-in. apart along 2-in. by 6-in. rafters.

The old stair landing had been made into a suspended storage rack located in the center next to the Kilgore building (indicated by darkened area on accompanying sketch. On this rack were stored lawnmowers, motors in cardboard boxes, etc. It was here the fire started, apparently due to spontaneous ignition of oil leaking into the cardboard. Being a warm day (temp. 80 deg. F.) with probably over 100 deg. F. inside the closed building, which was filled with combustible materials, the stage was set for a spontaneous fire.

Butane and Dynamite Caps Stored in Building

The building was used by a local hardware and building material firm. Beside the contents of tarpaper rools, cement, hardware etc., an additional hazard was contained in some 100 lb. butane containers and 30 cases of dynamite caps. Although the fire never came close to these materials, the risk was sufficient, to give fire fighters some concern. The close studding and bracing of the roof made fire extinguishing difficult as only one stream would cover one 24-in. spacing the width of the building; every spacing required a separate stream.

The fire was spotted and the alarm immediately transmitted by a local photographer and TV station reporter who, incidently, made news movies of operations which appeared on WTVJ in Miami at 6:45 P.M.

The first-due engine, was a small pumper with 300 gal. tank, wet water and two pre-connected 1½-in. lines. The crew made entrance using masks, with the 1½-in. lines and quickly extinguished the fire on the rack, but from below it was impossible to reach the seat of the fire in the roof area.

Mutual Aid in Effect

Fire Chief E. L. Sullivan sized up the problem facing his men—the highly flammable contents, and high value exposures—and ordered out the remaining engines, a 500 GPM and a 750 GPM pumpers and then invoked mutual aid, which brought a 500 GPM commercial unit from Florida City and two Dade County Fire patrol rural rigs.

These units were located as indicated on the diagram: (1) small pumper with supply line from hydrant across U. S. No. 1 Highway through the filling station doorway; (2) 500 GPM pumper, two 2½-in. lines; (3) 750 GPM pumper, 2½-in. line; (4) Florida City, one 2½-in. line; (5) and (6) County trucks, one 1½-in. line.

Holes were cut in the flat roof in efforts to reach the fire but had to be abandoned when the roof began to give way. Then the building was laddered and the slow process of cutting holes through hollow tile walls between each row of studding was begun. By this process extinguishment was accomplished in one and one-half hours.

Three Fatalities in Dwelling Fire

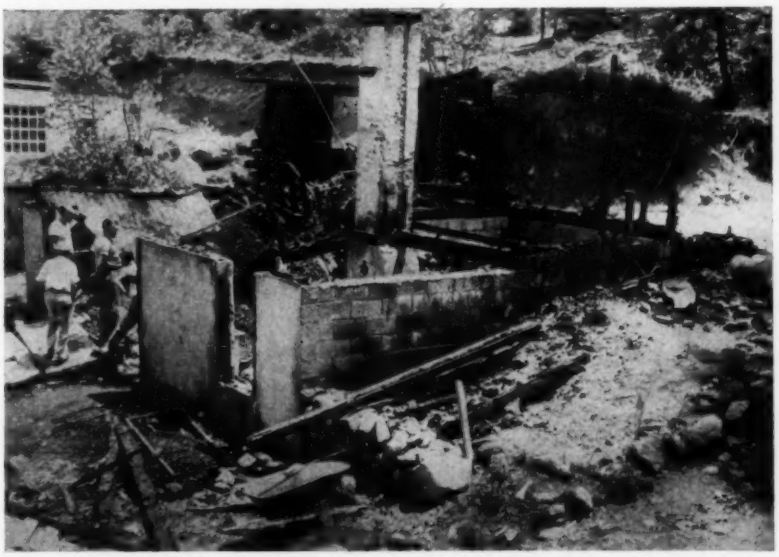
Three residents of Sandy Hook, Conn., near Newton, perished in a fire that destroyed the four-room home of Mr. and Mrs. Gilbert Van Valkenburgh, Glen Road, on June 14.

Found in the ashes of the home by firemen were Mr. and Mrs. Van Valkenburgh, and William Ingram, Mrs. Van Valkenburgh's son by a previous marriage. The bodies were identified only by dental charts.

Investigation as to the cause of the fire centered around three theories: lightning, a discarded cigarette and a defective gas stove. Any of these, fire officials said, could have caused the blaze. The Van Valkenburgh family retired for the night at 2 A.M. A severe lightning storm was raging at the time of the fire.

Another son of Mrs. Van Valkenburgh, Donald Ingram, 21, who had been sleeping in the room with his brother, escaped from the flames. Donald had been sleeping with his brother, but seeing the bed empty, assumed William had fled.

TOM MAGNER



Three bodies were found in the ruins of this home at Sandy Hook, Conn., on June 14 following an early morning fire which destroyed the structure.

Fog Tests Held in Arlington, Ohio

Fire fighters from ten states and more than 50 Ohio communities participated in fog fire fighting experiments held in Upper Arlington, Ohio, on April 4th, last.

The tests, to determine the efficacy of fog application, were held in a 13-room, two story dwelling. The tests were sponsored by the Franklin County (Ohio) Fire Fighters Association (Sam Foster, President) and the Ohio Inspection Bureau. The Columbus, Ohio, Fire Department also participated.

Despite the inclement weather, crowds estimated into the thousands were present during the day. Four persons, two of them firemen, required medical treatment during the tests.

The three-story dwelling was donated to the County organization by the Ohio Oil Company for the purposes of the test. It was stocked with furniture to approximate conditions that would apply in an average dwelling. Temperatures were recorded by instruments, and tests were supervised by Emmett Cox of the Western Actuarial Bureau and Fire Chief Samuel Foster of Upper Arlington. Present, also, was former Chief Lloyd Layman, recently named head of the Fire Division, Federal Civil Defense Administration.

The summary of these tests, which clearly indicated the efficacy of water fog, are given in the table above.

Left: New Arlington fire fighters attack fire with water fog. Right: Chief Sam Foster and Mayor Bloser of Upper Arlington observe effects of fog streams on dwelling fire.

SUMMARY
UPPER ARLINGTON FIRE TESTS
APRIL 4, 1954

Test No.	Rooms Involved	Area Sq. Ft.	Volume Sq. Ft.	*1 Floor Loading #	*2 Temp. Deg. F.	No of Lines 1½"	No of Lines 1"	Water Used Gals. Indirect	Water Used Gals. Direct	*3 Time Min.	*3 Time Sec.	*4 Est. Gals. Str. Stream
1	1	248	2,230	1,488	900	1	–	71	21	1	11	1,200
2	2	369	3,320	2,214	1,400	2	–	92	83	1	15	2,400
3	2	207	1,863	1,242	1,310	1	1	130	40	2	19	2,400
4	1	258	2,580	1,548	1,400	1	–	80	60	1	11	1,200
5	2	385	3,850	2,310	1,700	1	–	65	30	–	58	3,000
6	5	418	4,180	2,508	1,900	1	1	174	120	2	48	6,000

*1 Original program called for 10 pounds loading per square foot but more normal loading of 6 pounds was used.
*2 This was the temperature at the time indirect application of water was started.
*3 This was the length of time of indirect application; firemen entered immediately after lines were shut off.
*4 This is the estimated amount of water that would have been necessary to use if straight streams were used to prevent extension of fire to other rooms. As can be seen, this would have been impossible in almost all cases. For example, in Test #6, it would have been necessary to have had approximately 30 2½" lines in operation at one time.
NOTE: Nozzle pressure was estimated at 100 pounds for 1" and 60 pounds for 1½" (originally stated to be 100 pounds). 90-degree fog cone was used throughout; straight stream used for direct application; engine pressures were about 170 pounds for 1" lines and 150 pounds for 1½" lines.

Los Angeles Department Continues Growth

A new field division and a new battalion have been established by the Los Angeles Fire Department to serve the fast-growing San Fernando Valley area of the Southern California metropolis.

In announcing the formation of the new units, Chief John H. Alderson promoted four battalion chiefs to assistant chief rank and six captains to be battalion chiefs.

New Division 4 will have its headquarters at Station 39 at Van Nuys in the geographical center of the Valley. It will contain 14 fire stations housing 14 engine companies, 3 trucks, 2 salvage, 1 rescue, plus reserve units.

Division 4 formerly was under the supervision of the assistant chief in command of Division 2 with headquarters at the main Hollywood station, No. 27.

New Battalion 15 will serve the north ed of the Valley with headquarters at Station 77, Sun Valley. Battalion 14 headquarters remains at Station 60, North Hollywood, and will serve the southeast portion of the Valley. Battalion 10 MQ has been moved from Station 39 to Station 83, Encino, and serves the West Valley.

Under the L.A.F.D.'s "six year" plan, six new stations are planned in the Valley, including one to house a crash truck at San Fernando Valley Airport.

New assistant chiefs are Ronald T. Robertson, William L. Miller, Carl N. Carter, and Marvin E. Meador. All have received field assignments except for Chief Miller, who has been named as head of the Fire Prevention Bureau.

Front row: Assistant Chiefs William Miller and Ronald Robertson; Back row: Assistant Chief Carl Carter, Chief Engineer John Alderson and Assistant Chief Marvin Meador.

New battalion chiefs include Harold F. Bradley, Charles W. Bahme, Jack S. Douglass (cq), Richard S. Stephens, William R. Goss, and R. M. Hill. All except Goss and Hill have field commands. Goss and Hill are new assistants to Chief Miller in the Fire Prevention Bureau.

Chief Alderson also announced establishment of two new truck companies, 5 and 64, to serve southwest and southeast L. A. Truck 5 is stationed in Westchester within short running distance of L.A. International Airport, and Truck 64 is in the Watts District.—CLIFF DEKTAR.

N. Y. Chapter of Soc. of F. P. Engineers Elects

Paul C. Lamb, of Lever Brothers Company, was elected president of the New York Chapter of the Society of Fire Protection Engineers, at the annual business meeting of the Chapter held in New York City on June 15.

Other officers are: Spencer T. Stack, New York Fire Insurance Rating Bureau, first vice president; Dwight L. Copeland, Ebasco Services, Inc., second vice president; and William E. Grubert, Royal Liverpool Insurance Co., secretary and treasurer.

Arthur W. Sullivan, ADT Company, and Robert L. Strong, Johnson & Higgins, were named to replace two members of the Executive Committee whose terms expire this year.

"There is hose that will still be in service when I retire!"

naturally, it's

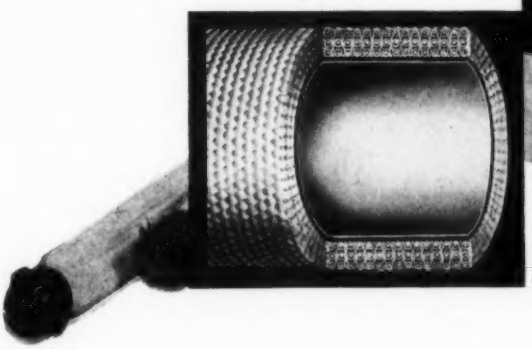
EUREKA

Multiple-Woven

Users know it's not uncommon for Eureka MULTIPLE-WOVEN fire hose to remain in active service for 20 or even 25 years. They know, too, that in the long run MULTIPLE-WOVEN is the most economical, the most continuously dependable fire hose they can buy!

True, its initial cost may be nearly *double* that of the lowest priced approved hose. But, if a length of Eureka MULTIPLE-WOVEN outlasts four or five lengths of the cheaper hose, then top-quality MULTIPLE-WOVEN *actually costs less than half as much in the end!*

In addition, you get the benefits of such special features as *balanced weaving* and *controlled curing* which eliminate excessive writhing of the hose under pressure, and a *smooth-surfaced rubber lining* which assures maximum nozzle pressure, plus the unique *circular-multiple-woven jacket* in which all plies are woven *and interwoven* into a single tubular covering that cannot harbor water or dirt! And, finally, you have the satisfaction of buying fire hose from a specialist.



Note how criss-crossing vertical cords tie all plies into a single jacket.

"For greater protection to life and property"

EUREKA FIRE HOSE

Since 1875, Specialists in Manufacturing Circular-Woven Cotton Rubber-Lined Fire Hose

195 Hudson Street • New York, 13, New York • *Division of United States Rubber Company*

Short Cuts and Gadgets

TO SPEED GETTING BACK INTO SERVICE

The Anita, Iowa, Fire Department, Fire Chief Jerry Redburn, makes it a practice to get back into service as quickly as possible, in combating farm fires. To facilitate this, the vamps use a portable gasoline pump when a farm fire occurs involving hay, straw or grain. Once the fire has been well controlled, the volunteers loan this pump to the farmer, along with some 1½-in. hose and a nozzle. The farmer then uses this equipment to keep things wet down as needed, after the firemen return to quarters. According to the Iowa lads, this makes it possible for them to get back and get in service much sooner since it is not necessary to have the truck tied up miles out in the country.

* * *

SELF-LOCKING HOSE ROLL

At the Fire Department Instructors Conference in Memphis, last February, our roving reporter spotted a new method of making up a 1½-inch hose roll that appeared to have much merit. This was described and illustrated in one of the clever Bulletins issued by the Engineering Extension Service, Firemanship Training, Iowa State College, Ames, Iowa.

Mark H. Brosier, Supervisor of Firemanship Training at the College, has granted permission to reproduce the idea. Therefore, we bring you herein, the first page of the Bulletin, which describes the "Self-Locking Hose Roll."

* * *

FIREMEN LAY "FOAM CARPET" TO SAFEGUARD PLANE

At Hill Air Force Base, Utah, a two-engine cargo plane, whose pilot feared to land at another air base in Idaho because of a locked brake, made a safe landing, with the help of the base fire department. The operation entailed details which were unique, and worth passing along to our readers.

The pilot, Capt. William A. Deriemer, on a routine flight in a C-45 to Mountain Home AFB, Idaho, suspected the brake had locked on his left wheel. He cautiously circled down and barely touched the runway, to verify his suspicions. He and his two-man crew then returned to Hill AFB where they are stationed.

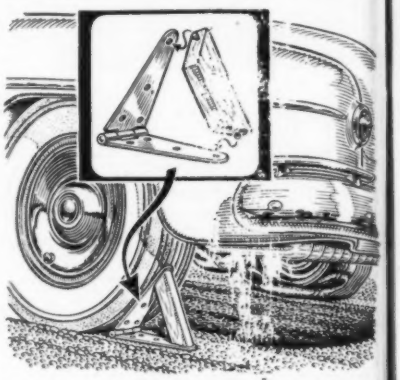
While he circled to use up his gasoline supply, the fire department, which had been appraised of the difficulty and the emergency measures to be taken, sprayed the runway for half a mile with foam.

Capt. Deriemer then cautiously settled onto the foamy, slippery substance as fire crash apparatus raced alongside. The locked wheels skidded safely along the runway for some distance and the plane remained upright. After about a quarter of a mile the wheel unlocked and the plane rolled to a halt, undamaged.

* * *

IMPROVISED COLLAPSIBLE WHEEL CHOCK

Here's an idea from *Popular Science* that might be adopted by fire fighters, who operate in areas where there are grades, and it is necessary to chock the



wheels of apparatus. A nail protruding from each end of the wooden brace between the lips of the hinge (an ordinary large strap hinge) fits into the end screw holes of the hinge to hold it open. The chock folds flat for storage.

* * *

TO FACILITATE RESCUE WORK

For positive and quick operation on rescue work requiring a roof rope, the following is suggested: Build a bracket and fasten it securely to side of apparatus where it can readily be seen. Slip the leather sliding glove through the hook of the life-belt, and buckle the life-belt around roof rope and roller. Then rest this 3-piece unit by the handles of the roller in the bracket in such a way that, when called for, it need only be lifted up and out of the bracket for instant use.

From W.N.Y.F. (New York Fire Department) suggested by Capt. Wm. A. Gimler

* * *

SAFETY BELTS FOR DRIVERS?

It is interesting to note that aircraft-type safety belts are being tried in the Toronto, Ont., Fire and Police Departments, according to recent press reports.

Study of accidents showed the most vulnerable seat is that at the right-hand of the driver, from which the passenger is thrown by collision against the dashboard or through the windshield. It has been called a "suicide seat."

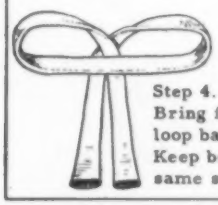
A number of fire departments in this country make it a practice to insist on safety-belts for the tillerman of aerial ladder trucks. He is particularly vulnerable to injury through shock to the apparatus.

SELF-LOCKING 1½ IN. HOSE ROLL

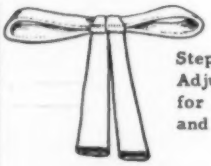
Step 1.
Lay hose same as for double donut roll.

Step 2.
Cross right side over left side about one step from bend in hose.

Step. 3.
Grasp cross with hand, throw loop forward, toward couplings.

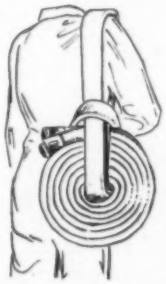


Step 4.
Bring forward part of loop back to cross. Keep both loops about same size.



Step 5.
Adjust cross and loop for a neat roll start, and roll.

Step 6.
When roll comes to couplings, pick couplings up and place on top of roll. Adjust loops, one shorter than other, slip long loop thru short loop just behind couplings and snug down.



Step 7.
Slip arm thru long loop and adjust on shoulder for comfortable carry.

This roll can be carried as a spare roll. It is easy for one man to handle; one man can easily carry two rolls. The couplings are protected and the roll will stand a lot of abuse without coming unrolled or tangled. When put in service it unrolls like the ordinary donut roll.

KEEPS FIRE DAMAGE COSTS DOWN!

Among the many types of up-to-date, fully approved fire protection equipment manufactured by C-O-TWO, the following comprise the principal items on the market today:

- carbon dioxide type hand and wheeled portable fire extinguishers
- dry chemical type hand and wheeled portable fire extinguishers
- carbon dioxide type hose rack and hose reel fire extinguishing units
- built-in high pressure carbon dioxide type fire extinguishing systems
- built-in low pressure carbon dioxide type fire extinguishing systems
- built-in smoke fire detecting systems
- built-in heat fire detecting systems
- high pressure carbon dioxide cylinder recharging equipment

Today's high costs and delayed replacements make it more and more a "must" for you to obtain the lowest insurance rate and the maximum in fire protection at a justified all over expenditure.

There is a personal sense of responsibility inherent with C-O-TWO Fire Protection Engineers that assures you of fully adequate firesafety... a definite plus in your behalf. Whether it's fire detecting or fire extinguishing... portables or built-in systems... C-O-TWO means top quality backed by experienced engineering that results in operating superiority for you at all times.

With C-O-TWO Fire Protection Equipment, simplicity, practicability, longevity and minimum maintenance are built-in features that guarantee fast, positive action the instant fire strikes. Furthermore, extensive manufacturing and field installation skills, together with approvals such as the Underwriters' Laboratories, Inc., Factory Mutual Laboratories, Armed Forces and Government Bureaus assure you of the finest in modern fire protection equipment.

WHEN BUSINESS STOPS . . . INCOME STOPS!

Don't take chances with your investment. Secure the benefits of highly efficient fire protection engineering today... our extensive experience over the years is at your disposal without obligation. Get the facts now!

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New Booklet on Fire-Safe Schools

The National Board of Fire Underwriters, 85 John St., New York, has announced distribution of a new 21-page pamphlet on fire-safe school buildings to educational institutions throughout the country.

The National Board said it was giving the widest distribution possible to this publication, which presents in brief form the essential elements of fire-safe school buildings and makes recommendations for obtaining fire safety in new buildings and in existing ones.

The pamphlet points out that on an average of once every hour during the working day—3,400 times a year—fire breaks out in some school. Over a period of years, 827 deaths have occurred in 60 of the more tragic school fires. Only last spring, the National Board pointed out, fire in an up-state New York school took the lives of 15 children, seriously injured 17 others.

In addition, 11 school fires last year resulted in losses of $250,000 or more per fire. The structures destroyed included elemmentary schools, high schools and university buildings.

The pamphlet deals with fire-safe building construction, that is, the limited use of combustible material, fire separation between stories, subdivision of large-area buildings by fire-resisting walls, and adequate exit facilities. It points out that fire extinguishers are needed for incipient fires wherever they may occur. Standpipe and hose systems are needed in the taller buildings. Automatic sprinkler systems are the answer where more than a limited amount of combustible material is present in construction or occupancy. They are also helpful in overcoming some structural defects and provide excellent control of fire hazards.

Heating and ventilating equipment, electric wiring and appliances, gas piping and appliances, school shops, laboratories, lunch rooms, storage areas, and waste paper handling arrangements all require proper safeguards for their fire hazards.

Included with the pamphlet is an inspection blank which suggests that inspections are to be made monthly by the building custodian and a member of the faculty and quarterly by them accompanied by a member of the fire department. The blank, properly filled out, is to be filed with the board of education or school commissioners.

California Chiefs Form Fire Prevention Section

Chief James H. LeStrange, of the Berkeley, Calif., Fire Department has announced the formation of a new section of the Conference of Northern California Fire Chiefs devoted exclusively to the problems of Fire Prevention.

At a meeting held in Berkeley on July 19, with representatives from thirty-eight different jurisdictions, including most of the major cities of northern California, it was decided to establish a fire prevention organization designed to permit the inter-change of information, to promote unity of action and increase of efficiency in attacking the tremendous fire loss problem in this area of the state.

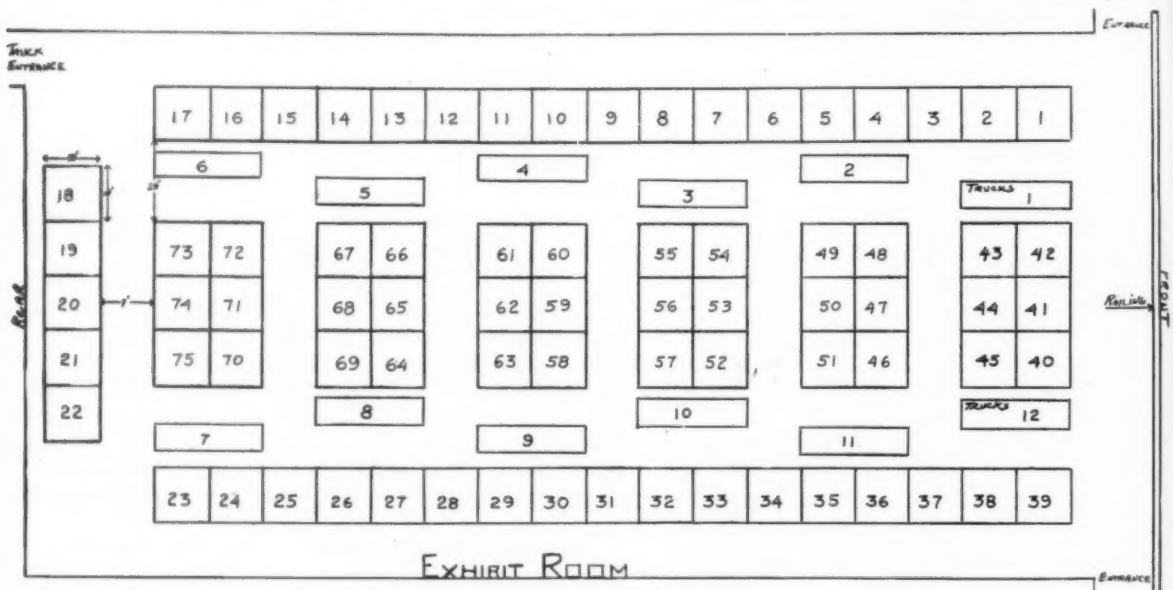
It is believed that through such a program the development of uniform regulations and policies can be enhanced so that the public can gain the greatest benefit from the tax dollar spent in fire protection.

The goal of the new section is to decrease the number of fires, thereby reducing fire loss, since fire loss records indicate that the bulk of lives lost and most of the dollar loss is through relatively small, easily prevented fires.

The meeting was called by Chief J. C. Hagerty of Watsonville, who heads up the Fire Prevention Committee of the Northern California Conference of Fire Chiefs, and arrangements were made for the session in Berkeley through the office of Fire Chief James H. LeStrange.

The new section of the Conference will be composed of men who do inspection work through various Fire Marshal's offices and Divisions of Fire Prevention. Fire Marshal James

(*Continued on page* 707)



Exhibitors who are to display products at Houston Conference of I. A. F. C.

Of the total of 75 booths for exhibitors at the forthcoming conference of the International Association of Fire Chiefs at Houston, Tex., 66 have been assigned. Only nine remain available. The diagram above shows the layout of booths in the exhibit hall. Exhibitors and the numbers of the booths they will occupy are given below:

No. 1-2—Scott Aviation Corp. No. 3—Federal Sign and Signal Corp. No. 4-5—Mine Safety Appliances Co. No. 6—FIRE ENGINEERING. No. 7—De-Lux Neon Manufacturing Co. No. 8—I.A.F.C. No. 9-10—Metcalf Brothers Co., Inc. No. 11—Unassigned. No. 12-13—General Electric Co. No. 14-15—Superior American Fire Alarm Co. No. 16-17—Mack Motor Truck Corp. No. 18-19—E. I. Du Pont De Nemours & Co. No. 20—Waukesha Motor Co. No. 21-22—Delco-Remy Division. No. 23—Exit Lock Co. No. 24—Dictaphone Corp. No. 25—Stephenson Corp. No. 26—Homelite Corp. No. 27—Sireno Co., Inc. No. 28—Four Wheel Drive Auto Co. No. 29—Unassigned. No. 30—Elkhart Brass Mfg. Co. No. 21—Atlas Safety Equipment Co. No. 32—Fulton Bag & Cotton Mills. No. 33—American District Telegraph Co. No. 34—McCulloch Motors Corp. No. 35—Bi-Lateral Fire Hose Co. No. 36—Peter Pirsch & Sons Co. No. 37-38—Akron Brass Manufacturing Co. No. 39—Clifford B. Hannay & Sons, Inc. No. 40—Wooster Brass Co. No. 41—Fyr-Fyter Co. No. 42-43—Waterous Co. No. 44—E. M. Bloomberg & Co., Inc. No. 45—E. & J. Manufacturing Co. No. 46—The Fabric Fire Hose Co. No. 47—The American City Magazine. No. 48—American-LaFrance-Foamite Corp. No. 49-50—Hale Fire Pump Co. No. 51—Kohler Co. No. 52—Boston Woven Hose & Rubber Co. No. 53—American-Marsh Pumps, Inc. No. 54—The Circul-Air Corp. No. 55-56-57—Rockwood Sprinkler Co. No. 58-59-60—The Gamewell Co. No. 61—F. N. McIntire Brass Works, Inc. No. 62—Cardox Corp. No. 63—Motorola, Inc., No. 64—Eureka Fire Hose Co. No. 65—The Leece-Neville Co. No. 66—Seagrave Corp. No. 67—Powhatan Brass & Iron Works. No. 68—Unassigned. No. 69—Muscular Dystrophy of America, Inc. No. 70—Super Vacuum Manufacturing Co. No. 71—Mars Signal Light Co. No. 72—Notifier Manufacturing Co. No. 73—M. A. Sterner Co., Inc. No. 74—Radio Apparatus Corp. No. 75—Miles Reproducer Co., Inc.

EXHIBITORS AND THEIR FIRE TRUCK SPACE NUMBERS: No. 1-2—American-LaFrance-Foamite Corp. No. 3—Memco Aerial Ladder. No. 4-5—Seagrave Corp. No. 6—Mack Motor Truck Corp. No. 7-8-9-10—Unassigned. No. 11—Peter Pirsch & Sons. No. 12—Unassigned.

The chairman of the Exhibit Committee is Chief L. Clyde Canning, Fire Headquarters, Midvale, Utah.

Fire Out-in ½ Second!

In recent open air tests under adverse conditions, CBM completely extinguished highly flammable lacquer fire in a record one-half second. Only one automatic ceiling type extinguisher was used.

FOR FASTER EXTINGUISHING ACTION – SPECIFY TRONA CBM

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CBM is the newest and most efficient fire fighting agent yet discovered. Used extensively by the U. S. Air Force because of its faster extinguishing action and extremely low freezing point, CBM has been proven considerably more effective than carbon-tetrachloride. Tests show that less CBM is decomposed into non-effective gases. More remains as a useful fire extinguishing agent. Because of negligible corrosive action and lower freezing point, CBM extinguishing units are light and compact. They discharge rapidly and completely at temperatures as low as –65° F, while the liquid nature of CBM makes recharging fast and easy. Its low toxicity and high density qualities make it far less hazardous than old-fashioned agents – the fire is out faster . . . the operator is exposed for a shorter period.

PROPERTIES

Characteristics	Clear, colorless liquid with a sweet odor
Boiling range at 760 mm. Hg 5-95%	66-68 deg. C
Freezing Point	below –65 deg. C.
Specific Gravity at 25/25 deg. C.	1.910/1.940
Pounds per gallon at 25 deg. C.	15.98
Flash Point	None
Fire Point	None
Molecular Weight	129.4
Solubility per 100 grams water at 25 deg. C.	2.4 grams
Solubility in common organic solvents	Infinite
Cloud Point (moisture)	below 3 deg. C.

Meets U. S. Air Force Specifications No. MIL-B-4394-A

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Please send me informational bulletin on CBM describing its superior extinguishing properties.

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News of the Manufacturers

New Ownership for Link Radio Corp.

A new company, Link Radio Corp., 125 West 17th St., N.Y. 11, N.Y., organized under the laws of New York, has taken over complete rights and title to all of the assets of the former Link Radio Corp. (Delaware), a pioneer in the field of mobile radio communication equipment for over a decade.

Murray Platt

Murray Platt, president of the new Link Corp., announced that production lines are in full swing for all types of past and present Link equipment to meet the needs of police and fire departments, state and federal governments, civilian defense groups, etc.

The new Link Radio Corp. is owned exclusively by Mr. Platt. Key executives working with Mr. Platt are: James B. Ferguson, Chief Engineer; Paul H. Bellingham and Robert W. Fisher, both Assistant Chief Engineers and District Managers; and Ignatius R. Barbitta, Central District Manager.

New Absorbent Material

A radically new type of absorbent material has recently been placed on the market by The Soakup Corporation, 646 Chestnut St., S.W., Grand Rapids, Michigan. Composed of rock sponges,

expanded under intense heat from the lava of prehistoric volcanoes, the material, which is called "Soakup," does what its name implies — soaks up all types of liquids. Being chemically inert, it never gets muddy, and it is fast in operation and light in weight. For accidents, Soakup can be used like a sweeping compound.

For street use in absorbing oil and volatile solvent spills due to accidents, Soakup can absorb the liquid immediately, leave the surface non slippery, and then be swept into the sewer. Soakup is packed in 1½ cu. ft. bags, weighing approximately 13 lbs., and is approved by Underwriters Laboratories.

Notifier Appoints Bray

Jamie Bray, formerly one of the owners of Fire Notifier, Inc., of Houston, Tex., has been appointed as Factory Representative of the Notifier Mfg. Co., Lincoln, Neb., for the State of Texas, according to Oliver T. Joy, President of the latter company.

Jamie Bray

Mr. Bray's work will be to establish dealers throughout Texas, and to train these men for service and installation. He has had several years experience in fire detection.

New Single-Stage Fire Pump By Waterous

A simple, sturdy, single stage 500 GPM Class A centrifugal pump that accommodates "de luxe" accessory equipment is announced by the Waterous Company, St. Paul 1, Minnesota.

New Waterous single-stage pump

Known as the CA-1B, this new pump features a new transmission which allows it to be equipped with either a gear-driven or electrically driven primer. It may also be furnished with a tachometer drive. Gear case "drop" between truck mounting pads and center of the drive shaft has been increased substantially.

As in other Waterous centrifugal pumps the impeller shaft bearings run in oil and are protected from water by stuffing box, flinger ring, and a special bearing seal. Valves and other fittings are the same as furnished with other Waterous pumps.

The new pump replaces the Model CA-1 in the Waterous line.

New Aluminized Suit for Firemen

Wheeler Protective Apparel, Inc., 224 West Huron Street, Chicago, announces the development of a new aluminized asbestos fireman suit which will permit work under higher heat conditions than are possible with the conventional asbestos suit.

These new firemen's suits are made from Underwriter's grade herringbone weave, tropic-weight asbestos which has

New aluminized suit for firemen

been impregnated with a thin, pliable coating of aluminum. Garments made from this aluminized fabric reflect 90% of radiant energy, making it possible for men to stay on the job longer with fewer cooling off periods. In addition, aluminizing makes possible the safe use of lighter weight asbestos which greatly reduces the weight of the garment. This prevents excessive fatigue on the part of the wearer. No "wetting down," which adds even more to the weight of the ordinary heavier grade asbestos suit, is necessary with aluminized fabric.

Ansul Offers Valuable Bulletins

Ansul Chemical Company, of Marinette, Wis., prominent producers of dry chemical fire equipment, is making available to interested parties its entire list of 15 technical bulletins covering recommened procedures for protecting many difficult and unusual fire hazards.

The list of bulletins available follows:

1. Effect of packed dry chemical on operation of Ansul dry chemical fire extinuishers.
8. Fires in molten salt hardening baths.
9. Effect of Ansul dry chemical on electric motors and generators.
18. Fire hazard—lithium aluminum hydride.

(*Continued on page 699*)

Symbol of Quality-Service-Protection . . . for the modern fire fighter

The famous Midwestern Manufacturing Company trademark is your guide to the finest protective clothing that money can buy—garments that are specifically designed to help safeguard your men's life on every run—enable them to use their equipment to the fullest advantage. Superior quality, design, fabric texture and many exclusive features have made Midwestern Protective Clothing highly favored wherever men fight fires.

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Manufacturers of the Famous **MACKINAW Coats**

FALSE ALARMS

Prepared

Youth and maid in car. Car falters, then stops.

Calloused Youth: "Outta gas, by gosh!"

Pour-but-honest Girl: "Oh yeah!" (She produces a flask.)

Calloused Youth: "Aa-h-h! What's in the flask?"

Girl: "Gasoline."

Mistake

A man and his little girl were among the passengers in an over-crowded elevator. Suddenly a lady standing in front of the man turned around and slapped him. Before he had a chance to ask why he deserved such treatment, the woman had left in a huff. The little girl, however, innocently explained the whole incident by saying, "I don't like her either, daddy. She stepped on my toe, so I pinched her."

Hopelessly lost in the snow, he was just about to give up when suddenly he saw coming toward him a big St. Bernard with a flask tied under its neck.

"At last," he gasped, "here comes man's best friend and a dog."

Alibis

He was a traveling man. Eventually, his wife was rather bored with her lonely existence and planned her home life to coincide with his itinerary. One evening she believed him to be in Chicago, so she seized the opportunity of his absence to provide some food, and may we say "entertainment," for her husband's best friend.

Suddenly the phone rang. She answered. As she hung up she muttered quickly to her companion, "Good gracious, my husband has come back to town."

Her companion, a rather cautious fellow, made a quick dive for his hat and coat. But the wife turned to him with a smile and said quietly, "Oh, don't worry. It's quite all right. My husband just called to explain that he won't be home until late tonight. He says he's out playing poker with you."

"Let's not be tempermental, Avery. That's no way to pull a box!"

"Let's go in together. They say this place is haunted!"

A big burly Texan walked into the bar of a famous night club, saw a customer lying helpless on the floor, and pointing to him, said: "Man, I sure would like to try some of that."

The evening star its vesper lamp
Above the west had lit,
The dusky corners of the night
Were falling over it.
He seized her waist and clasped her hand
And told his tale of love;
He called her every tender name,
"My darling, duck, and dove."
A tremor shook her fairy form,
Her eyes began to blink
Her pulse rose to a hundred, and
She cried: "I think——I think——"
He sighed: "You think you love me," for
His soul was on the rack;
"Oh, no!" she yelled, "I think a bug
Is crawling down my back."

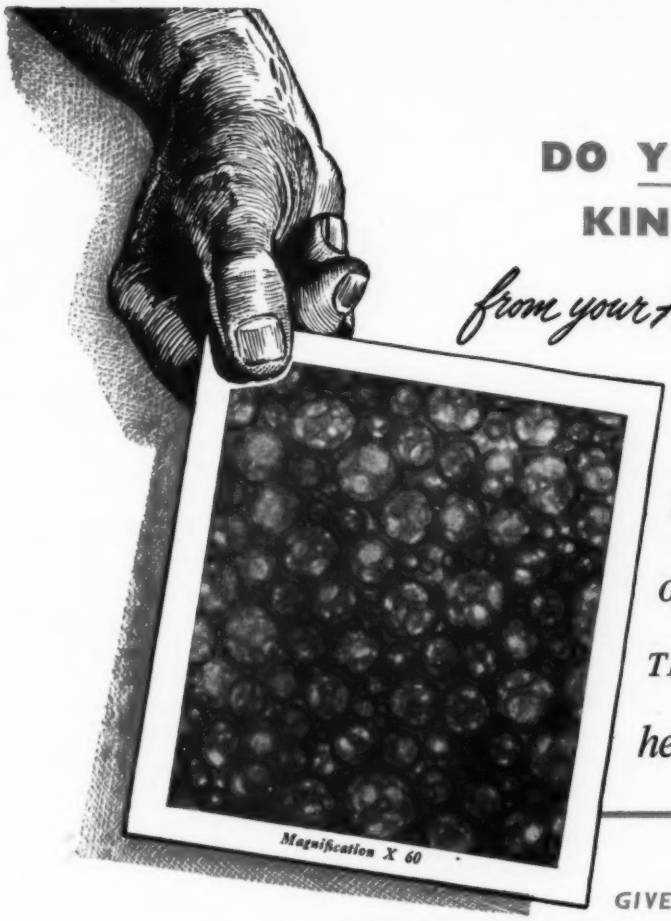
Diverted

A young lady wearing a long mink coat went to a dice table in Las Vegas and insisted on betting $1,000. She overcame the objection that this was the house limit and was given the dice to roll.

She then took off her mink coat, revealing her complete nudity. She rolled the dice once, rolled them again, and said, "I made it." She collected the winnings, put her coat on again and left.

"By the way," one of the house men asked the other, "what was her point?"

He shrugged: "I didn't notice either."



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L. A. Harbor Fire

(*Continued from Page 653*)

in a diked area is indicated.

9. Catwalks should be located on the outside of dike walls and be of non-combustible construction. They were wooden and located inside the wall at Tide Water.

The potentials of a major outbreak of this nature is shown by the location of the gigantic lumber yard on the north exposure and a large shipyard on the south. Moreover, 10 freighters were evacuated from the West Basin area of the Los Angeles Harbor and a towboat service pulled 40 smaller craft to safety.

The Tide Water fire was the fourth in the past 10 years which caused damage in the millions in the Los Angeles Harbor. The most recent occurred three years ago when the Union Oil Co. refinery tank storage area suffered a $2,000,000 loss. The oil tanker Markay exploded and burned at the Shell Oil terminal on June 22, 1947, killing 11 persons and causing many millions of dollars damage. On Jan. 2, 1943, a $1,000,000 fire destroyed the French Sardine Co. and South Coast Fisheries Inc., canneries on Terminal Island.

Fire Fighting Symposium

The Bureau of Yards and Docks of the Navy Department is sponsoring a Symposium on Fire Fighting to be held at the U. S. Naval Civil Engineering Research and Evaluation Laboratory, Port Hueneme, California, on 16, 17 and 18, November, 1954.

The Symposium will be broad in scope. Emphasis is on theories, unique solutions, and requirements for operation in military bases ashore and afloat. Its objective is to explore and discuss military requirements and problems and current and future developments pertaining to the field of fire fighting. Topics such as "Fire Fighting Problems with Rocket Fuels" and "Extinguishment Research in Great Britain" are to be included.

Representatives of various military services, research centers, professional fire technologists, and manufacturers of related equipment are invited to attend. Requests for further information should be directed to Officer in Charge, Code 794, U. S. Naval Civil Engineering Research and Evaluation Laboratory, Port Hueneme, California.

Firemen Injured at Mill Blaze

Four firemen were injured on the evening of July 6 when a spectacular $250,000 fire destroyed the Reed Grain & Milling Co. warehouse and offices at Paramount, Calif.

Six Los Angeles County fire companies under Deputy Chief John Duncan fought for more than three hours to control the blaze.

Most seriously injured was Capt. Jack Maddux, 40, of Engine 10, who received a possible skull fracture and back injury when a hose whipped loose, the nozzle striking him against a nearby pumper.

Firemen Kenneth Larson, 29, also Engine 10, suffered back injuries, and Harold Boothe, 27, from the same unit, received a broken rib.

George Bass, an off-duty Vernon fireman, who saw the fire while driving in the area, suffered a deep cut on his hand when a piece of corrugated tin fell and struck him. He was assisting the county fire fighters.

Cause of the fire has not been determined.—CLIFF DEKTAR.

Among the Buffs

By Paul C. Ditzel

COLUMNISTS, being generally cantankerous individualists, are usually unhappy. Today I am even less happy.

Chief Engineer John H. Alderson of the Los Angeles Fire Department is the target of a well-meaning but sadly misguided group of individuals who are being duped into attacking the fire department because of 79 Negro firemen who allegedly want transfers into stations containing white firemen.

Actually, the integrationists have themselves fallen victim to the neatest trick of political sleight-of-hand to hit these parts since an administration of many years ago which bought and sold promotions and assignments to Negroes as a regular affair.

Chief Engineer Alderson is no especial friend of fire buffs in general. Therefore, this defense by a fire buff of a chief who is unquestionably one of the most competent administrators the fire service has ever seen cannot be construed as an attempt to curry favor.

Chief Engineer Alderson has served notice that he will retire if integration is forced upon him and he is stripped of his City Charter-given powers to assign

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and transfer men for the good of the fire department and the citizens of Los Angeles. Unquestionably, the morale and efficiency of this great department will suffer if integration is forced upon Los Angeles. There will probably be more fires, bigger fires and attendant loss of life. Now if buffs were bugs, this situation would be ideal. But they're not—at least the great majority of them—hence this moral and physical support of Chief Alderson's stand.

The issue most definitely is not one of whether Chief Alderson is or is not in favor of segregation. The real story lies in his support of Reform Mayor Fletcher Bowron, who, with Chief Alderson, helped clean up what was once known as the country's worst governed city. There's a new mayor in town—the handpicked choice of a powerful newspaper publisher—and it is alleged that Alderson is tops on the list of persons who must go. If Chief Alderson's assignment and transferral powers are removed, he will, in his own words, be "like a cork bobbing upon the water." This would open an expressway path to blitzing the city's Civil Service Commission preparatory to setting up a ruthless political machine.

While we're on the subject of Los Angeles, we might note the debut of a new, privately distributed, publication, "The White Sheet," edited by Captains Leo K. Najarian and Don Wilson of the Los Angeles Fire Prevention Bureau. The newspaper, distributed only to members of the bureau, is packed with technical information on fires, plus some wry observations. Witness:

"Two lady schoolteachers from Brooklyn stopped at a small hotel in Alberta, Canada, while on their vacation. One of the pair made a tour of the corridors to hunt the exits in case of fire. The first door she opened turned out to be the public bath, occupied at the moment by an elderly gentleman taking a shower.

"Oh, excuse me!" the lady stammered. "I'm looking for the fire escape." Then she ran for it. To her dismay she hadn't gone far when she heard a shout behind her and, looking around, saw the gentleman, wearing only a towel, running after her.

"Where's the fire?" he yelled.

Letter from Richard Payne, of the Physics Research Laboratory, Ansco Corp., Binghamton, N. Y., asks more information on the second Farban fire mentioned in a recent lead story in this magazine. Payne says there's controversy, too, on what caused the second explosion at the Ludwigshafen plant on July 28, 1948. He'd appreciate hearing from anyone with more information.

Visitors this month included Walter Thompson, 17516 Fries Ave., Lakewood, Ohio, a member of the Fire Alarm Club in that area.

The Box 22 Associates of New Haven, Conn., say their club has come back into active service and is ready to roll. New officers include: Dr. Karl Bretzfeld, president; Forsyth Sheppard, vice president; J. Harold Law, treasurer and Harold F. Dahill, secretary. Two members elected to the board of directors were Frederick Toelk and Charles McQueeney. The new officers and directors were sworn in by Fire Chief Thomas J. Collins.

That's about 30 again for this month. Keep the anecdotes and personal stories rolling along to 419 Napolean St., Playa del Rey, Calif.

You should own a handsome MINIATURE Fire Fighter's Badge

Whether you are a "Regular" or a "Volunteer" a miniature badge is a must for off-duty recognition. Carry your miniature with pride, it's a small token of your contribution to your community.

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Questions and Answers

Some Miscellaneous Questions

To the Editor:

I am preparing myself for a promotional examination and the following problems I need briefing on.

1. What is the name of fireproof film, if any?
2. When is an aerial ladder in cantilever position?
3. When is a ladder is tension?
4. When is a ladder in compression.
5. Can a ladder be in tension and the truss sides in compression?
6. What is the best way to open a tempered glass door? Should the lock be driven in or out?
7. Does plate glass break into slivers once the glass has been broken?
8. If an aerial ladder is used with a ladder pipe, is the strain the opposite or the same if the aerial were resting against a building?

E.M.

Answer 1. There is no such thing as fireproof film, although there is a "safety film." The name for safety film is cellulose acetate film. It is slow-burning and presents somewhat less hazard than common newsprint. It is widely used today for motion pictures, commercial and otherwise.

Answer 2. An aerial ladder is in a cantilever position when it is extended at an angle and does not rest against a wall.

Answer 3. When a trussed ladder is placed against a wall, and if the trusses are on the bottom, the trusses will be in tension and the beam in compression.

If the trusses are on top, then the trusses will be in compression and the beam in tension.

Answer 4. See Answer 3.

Answer 5. See Answer 3.

Answer 6. There is no standard technique for opening tempered glass doors. If the lock, which is usually placed in the bottom sill, cannot be forced, or not opened, then it may be necessary to break the door. However, tempered glass doors are quite costly, and it is better, where possible, to open show windows or other openings rather than break the door.

Answer 7. Ordinary plate glass window usually breaks in large fragments when struck with an axe or other forcible entry tool.

Answer 8. If an aerial ladder is used with a ladder pipe, the reaction of the nozzle creates a stress in the same direction as if the aerial were resting against a building.

On the other hand, if the ladder were standing free of the building, and the stream directed in the general direction toward which the ladder is inclined, the reaction of the stream would reduce the strain on the ladder mechanism. In the latter case the effect would be very much the same as if an aerial ladder were placed against a building, but not permitted to bear its full weight against the structure. The strain on the ladder would naturally be less than if the ladder were raised free of the structure while the ladder pipe was in operation.

Maximum Suction Lift

To the Editor:

At a recent fire department meeting, the following situation was discussed relative to pumping from suction lift.

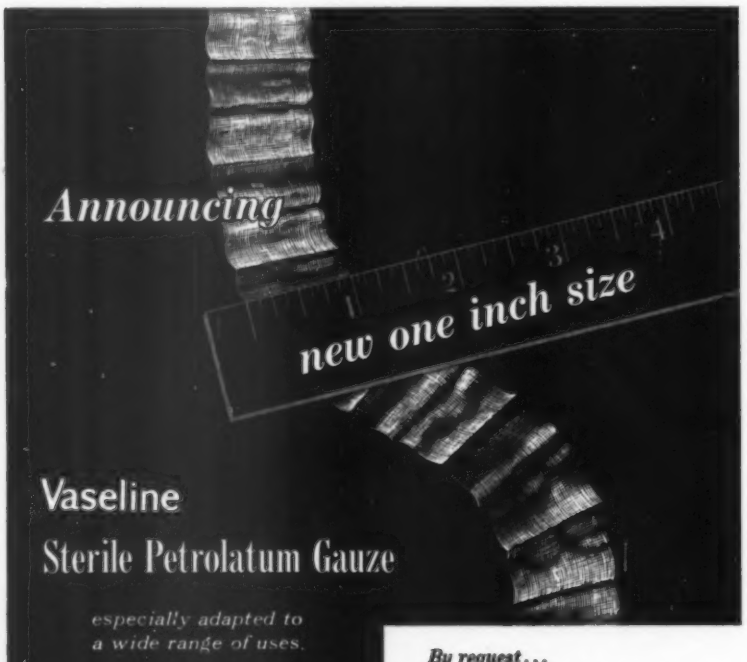
A nearby department of public works building was flooded in the lower levels. The depth of the water was approximately five feet and the height from floor to ground level measured 40 feet. A 1933 American LaFrance, rotary gear, 1000 gallon pumper was brought to the scene, and to the wonder of all, water was drafted from the depth, seemingly violating all the rules of maximum lift.

If you can explain this, or give us any substantial reason for this uncommon occurrence, we would appreciate it no end.

R.F.L.

Answer: At sea level it would be impossible for any pump to raise water 34 feet by straight suction.

Water can be raised by "suction" only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as far as atmospheric pressure will raise it.

At sea level, atmospheric pressure is 14.7 pounds per square inch. This pressure would raise water a little less than 34 feet. Thus the absolute limit which any pump could raise water by "suction" would be the same amount, namely, a little less than 34 feet.

What we believe has occurred is that the actual distance between the level of the pump intake and the surface of the water was appreciably less than 34 feet. Practically, it would have to be less than 30 feet before a pump would life water by suction, based upon the average ability of a positive displacement pump to lift by suction.

Tandem and Relay

To the Editor:

What is the difference between pumps when they are in "relay" and pumps when they are in "tandem."

W.T.M.

Answer: When pumps are so placed that one pumps directly into the other through a short section of hose, they are said to be placed in tandem. Where there is a considerable distance between the first and second pumpers, they are said to be placed in relay.

The purpose of placing in tandem is to provide a higher discharge pressure at the pump. For example, if a pumper is delivering water through a long line of hose over an area which is inaccessible to fire trucks, then the maximum pressure is needed at the supply end of the line. Hence pumps are used in such an instance in tandem.

On the other hand, if a pump could be placed near the center of the line, then they are said to be used in relay.

First Use of Sirens

To the Editor:

When did the fire departments first use sirens on fire equipment?

A.J.B.

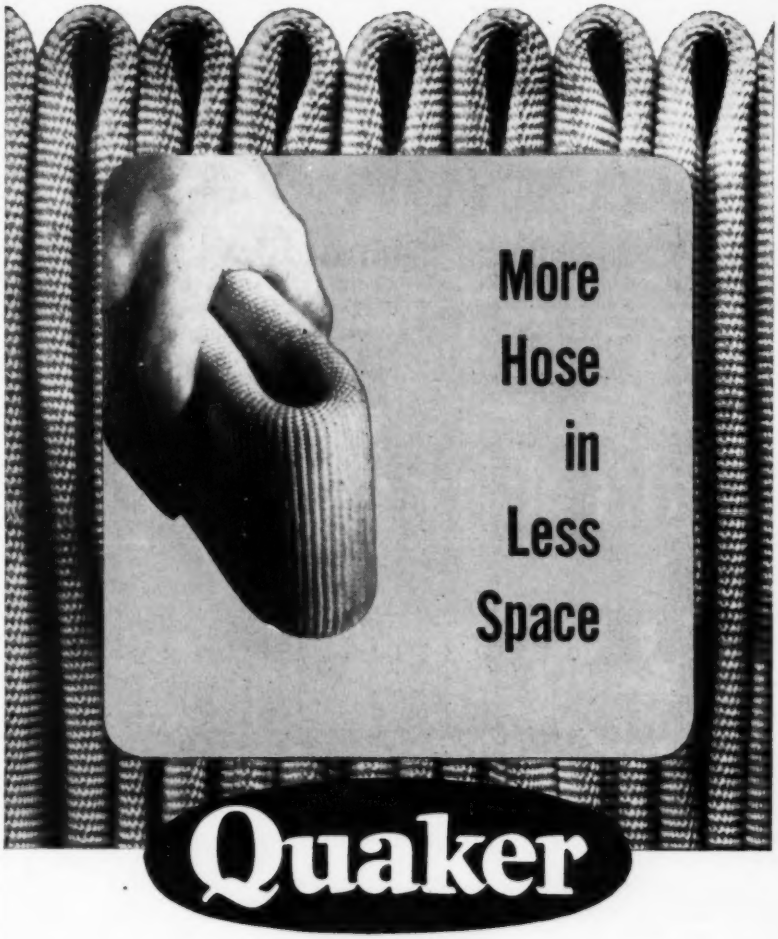
Answer: So far as we have been able to determine, the siren was first used by fire departments in 1906. It was a mechanically operated, friction-drive unit that worked off the fly-wheel of the automobile engine through a flexible shaft. The first use was on chiefs' cars. Later came the hand operated siren and after that the electrical unit.

Simplification of Explanation

To the Editor:

In the June, 1954, issue of FIRE ENGINEERING in the "Questions and Answers" column, E. M. is confused. I claim that his friend is correct, and that the information given him by the first party is wrong. He was told that in 3-inch hose there was 39 per cent less friction loss than in 2½-inch hose; that there was 33 per cent less friction loss in 3-inch hose than in 2½-inch hose (the preceding with 2½-inch couplings); and that there was 28 per cent less friction loss in two siamesed lines than in 2½-inch hose. If his friend were of a technical turn of mind in the use of the English language, then he was right and the statements are wrong.

This is my solution:



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Let the friction loss in 3-inch hose be represented by the quantity 1. Then friction loss in 2½-inch hose becomes the quantity 2.6. 2.6 — 1 is 1.6, or the amount that 3-inch hose is less than 2½-inch hose.

1.6 divided by 2.6 equals .615, or 61.5 per cent less.

So the correct answer is that the friction loss in 3-inch hose is 61.5 per cent less than the friction loss in 2½-inch hose.

In like manner it can be shown that the friction loss in 3-inch hose with 2½-inch couplings is 60 per cent less than in 2½-inch hose and that the friction loss in two siamesed lines is 72.2 per cent less than the friction loss in 2½-inch hose.

I know this is purely technical, but it is what the man (E.M.) asked for. Besides, I like the figures better because they more forcefully represent the astounding differences in the friction loss of hoses of different sizes.

Please bear in mind that this is no reflection on the figures and statements given in your answer, but that your figures help to prove that mine are correct.

W. H. M.

Raising Extension Ladders

To the Editor:

Do you raise a ladder with the fly towards the building or away from it?

J. D. M.

Answer: We believe the comments from "Fire Service Ladders," a book published by FIRE ENGINEERING, will give you the information you want.

1. If the rungs are in the top rail of the butt section, then the fly should be used underneath or towards the building (this is the Seagrave type of construction).

2. If the rungs are in the lower rail, then the fly must be used on top, or away from the building (this is Duo-Safety construction).

3. If the rungs are in the spacers between the top and bottom truss rails, then the ladder can be used either with the fly on top or underneath the butt. The top and bottom rails are of equal size in this type of construction, and therefore, have equal strength (American LaFrance construction, and any ladder made to the so-called Bangor design).

On metal extension ladders, all makes are designed to use the fly on top of the butt, or away from the building.

There is another point to watch which is sometimes overlooked, and that is the ladder locks frequently will not operate properly if the ladder is used in a position for the reverse of which it is designed.

Nozzle Pressure Constant for Given Engine Pressure

To the Editor:

A two-stage centrifugal pump is taking draft. At the discharge gate there is 150 feet of 2½-inch hose with a ¼-inch nozzle. If the engine pressure in either volume gear or pressure gear was 150 pounds, would the nozzle pressure change? I contend the water velocity in pressure gear would create a greater nozzle pressure than in volume or capacity gear even if the engine pressure were the same. P.W.P.

Answer: If a pumper is operating at 150 pounds pressure, and is delivering water through 150 feet of 2½-inch hose equipped with 1¼-inch nozzle, the nozzle pressure will be the same irrespective of whether the engine is operating in "capacity" or "pressure."

A greater pressure can be created by a centrifugal pump in "pressure" gear than with "capacity" gear. But if the engine pressure in each case is 150 pounds, you'll have exactly the same nozzle pressure in each case.

California Arson Investigators Organize

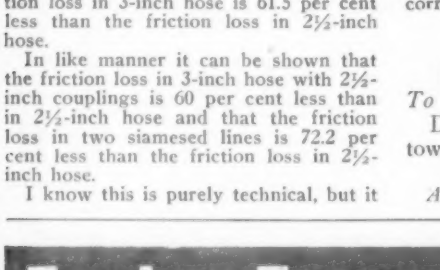
A California Conference of Arson Investigators was organized recently at a meeting in Los Angeles.

Chief Engineer Keith E. Klinger, of the Los Angeles County Fire Department, said the conference will promote closer cooperation between the police, fire services and related agencies in the understanding of their mutual problems in the field of arson investigation.

The group plans to establish a means of exchanging information and an annual training seminar on an academic level to cover all phases of investigation necessary to accomplish the apprehension and arrest of suspected arsonists.—PAUL DITZEL.

Fight Fires Faster!

with the DUAL FIRE FIGHTER



DIRECT PUMPING

AS A BOOSTER

Use the Dual Fire Fighter direct when truck pumper is unavailable.

Prevents costly damage to valuable equipment . . . extends your pumper truck range as much as 300 feet . . . reaches otherwise inaccessible water sources.

When fire strikes — prompt, sure action is an urgent necessity, and water is often inaccessible to the truck pumper because of trees, fences or other obstacles.

Two men carry the 162-pound Gorman-Rupp Dual Fire Fighter. Fighting a fire directly, or filling a vital need as a booster pump, the Gorman-Rupp Dual Fire Fighter starts throwing water in less than one minute.

Write for Bulletin No. 9-FD-11

GORMAN & RUPP PUMPS

THE GORMAN-RUPP COMPANY

MANSFIELD, OHIO

World Wide Fire News

By Roi B. Woolley

Bombs and Brochures—Off Target!

The idea that only those who reside in "target areas" should worry about an enemy bomb raid is refuted by the experience of civil defense folk out in Rialto, Calif.

Late in May last, the ground observer corps for civil air defense went through its paces for a whole week, and scheduled for the end of the week a climactic shower of leaflets on the town from several airplanes.

All was set; civil defense workers manned their posts throughout the city, scanned the skies and waited for the leaflet attack. But no leaflets—no literature of any kind. In fact, no planes!

After an hour of waiting and practicing the work to be done when the leaflets fell, the civil defense workers went home.

The 20,000 leaflets were dropped over nearby Fontana. Yeah—the pilots got their signals crossed.

Now, Rialto and Fontana townsfolk wonder if this sort of cross-up would happen in a bomb raid? Mebbe everybody should be prepared!

* * *

An Assist from the Air

We've heard tell of fires that were spotted by pilots of airplanes and by engineers of trains, but this is the first one we've come across discovered by a helicopter.

Prince Georges County (Md.) Volunteer Firemen got an assist recently from an Army helicopter pilot who spotted a fire and led them to it.

The fire destroyed a barn on the old Howard Taylor farm near Oxon Hill, Md. It was discovered by Maj. Donald S. Cassidy, 41, of Alexandria, Va., who was en route from Fort Belvoir to Fort Eustis, Va., by helicopter when he spotted the blaze.

Major Cassidy headed for a near-by anti-aircraft gun emplacement and asked the men there to summon firemen. He went into the air again and according to the press, guided the equipment to the fire a quarter of a mile away. He then landed and joined the smoke-eaters on the ground.

Thanks IRVING JOHNSON

* * *

From the News Ticker

Ten persons were killed in the Yugoslav coal mining town of Tuzla, following flash floods that set off underground gas explosions. . . . An estimated 50 South Koreans were burned to death June 23, when fire wiped out about 1,000 flimsy shops in the downtown section of Seoul leaving 5,000 to 6,000 persons homeless. A U.S. Army fire department informant said fire fighters estimated many injured, some of them critically, beside the 50 dead. . . . A French jet airplane exploded into flaming debris June 23, critically burning two children of an American army sergeant. The children were playing in a yard when the burning bits of the Thunderjet fell on them from about 5,000 feet altitude. Debris from the plane also burned a garage and set fire to two other buildings. The pilot parachuted to safety. . . . In May the Dutch meteorological office

12 reasons why Scott AIR-PAK is your best breathing equipment buy!

1. Ready for use in less than one minute, just turn on the valve and it's ready to go.
2. Clear visibility, cool air prevents fogging.
3. Simple to use. No practice or complicated training. Anyone can use the Air-Pak with complete confidence.
4. Fresh, cool AIR — not oxygen, for 100% protection in all breathing hazards, even explosive petroleum vapors.
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9. The AIR-PAK is all-purpose equipment, not just rescue apparatus.
10. Economical. Operates for as little as 50c per hour. There is no waste — air that is not used may be saved for next time.
11. The AIR-PAK is completely independent of surroundings — safe in any atmosphere, in any concentration. Can even be used under water!
12. Proven. Thousands in use by business, industry and the fire service.

WRITE TODAY FOR COMPLETE INFORMATION!

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SAFETY EQUIPMENT DIVISION

SCOTT AVIATION CORP.

215 ERIE STREET LANCASTER, N. Y.

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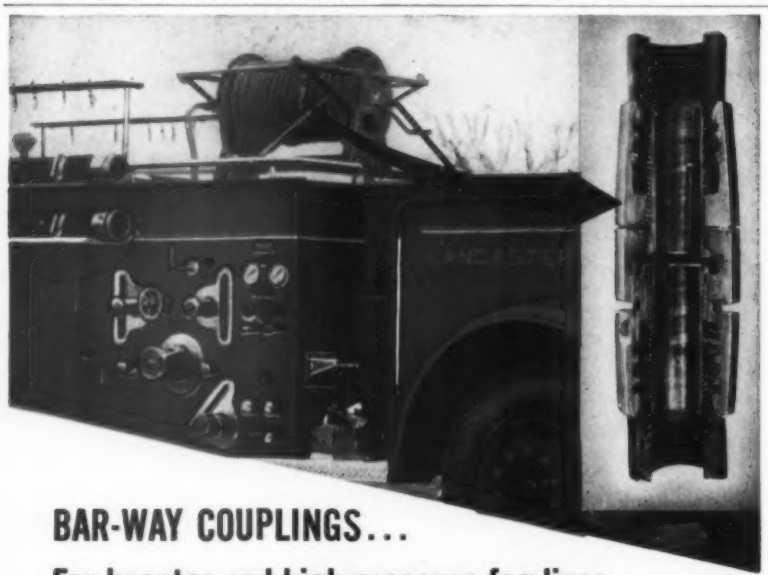
announced that "an emergency fire situation" had arisen in woodlands because of the low spring rainfall. Fires were raging daily and "many hundreds of acres and possibly more than 2,500 have been destroyed" authorities said. . . . In the year 1850, according to Ripley, fire destroyed the home of Rajendra—the rajput of Mandi, India, and 24 women died in the flames rather than appear in public! . . . A delayed report from Italy indicates eight workers were killed and seven injured last December in an explosives factory ten miles southwest of Udine. . . . A teen age German youth brought a 7.5 centimeter artillery shell to a costume party, and three persons, including the boy, were killed when it exploded. Forty-three other persons were hurt. The explosion ripped out the wall of the hall where 380 guests were holding a party. . . . It is disclosed that a U.S. soldier, Pfc. Thomas J. Morango, of Pittsburgh, saved a Hessian village near Fulda, Germany, from devastation by wheeling his burning ammunition truck out into the open country. Driver Morango then abandoned the truck before its load started exploding. It sent bullets spraying the air for more than an hour. . . . In Trenton, N. J., the City Commission adopted a resolution urging the Interstate Commerce Commission to deny the application of eleven trucking companies to haul explosives through the city proper. . . . A coal mine fire that killed two men at Glace Bay, N.S., raged out of control in a tunnel 2,000 feet under the Atlantic Ocean, earlier in the year. More than 200 miners were taken from the Dominion Coal Company mine after a dynamite charge set off the blaze. Two men were suffocated when they tried to fight the blaze. . . . In Adelaide, Australia, the Unley Fire Brigade answered a call to extinguish a blazing motorcycle, and found the fire call was a fake. They returned to their fire house to find their civilian clothes looted. Police were still trying at a late hour to catch the "false alarm thief." . . . Bert Loines of Mitcham, England, reported that an annoying cricket is gone from his hearth—but so is most of his wife's hair and his mother-in-law's eyebrows. Seems Loines had been spraying kerosene on the fireplace bricks to get rid of the little chirper. His wife came along, picked up what she thought was a kerosene can. She got gasoline by mistake. The resulting touch-off ruined the living room and did no particular good to Mrs. Loines and her mamma-in-law.



BAR-WAY COUPLINGS...

For booster and high pressure fog lines

There are four good reasons why the fire fighters specify BAR-WAY couplings. Four reasons why BAR-WAY couplings are growing in favour with firemen, hydraulic engineers and others who insist on the best.

- **SAFETY**—The coupling becomes the *strongest part of the hose line.* Tested to 3000 pounds pressure and 500 pounds pull.
- **FULL FLOW**—No suppression of flow in coupling. No shrinkage of hose at coupling.
- **FLEXIBILITY**—Reels smoother. Easily replaced. Nothing to catch on corners or underbrush.
- **BETTER MADE**—Accurately machined, always the same, interchangeable. WILL NOT FAIL.

Send for our free pamphlet. Gives detailed specifications for all types of pressure hose, ID and OD.

BAR-WAY MFG. CO., STAMFORD, CONN.

WEST COAST REPRESENTATIVE: W. D. RIGBON, 383 Brannan Street, San Francisco 7, Calif.

With Our Readers

Radio in Small Departments

To the Editor:

Radio can and does increase the efficiency and the manpower of the small city fire department.

We are a city of six thousand and cover parts of several townships, answering around 150 calls per year.

We have eight pieces of equipment, including three pumpers, a 75-foot aerial ladder, two 1250-gallon tankers, one four wheel drive Jeep with a 120-gallon tank with power take-off pump used for grass fires, one pick-up truck with extra hose and a 5-kw light plant. Two of the pumpers have 500-gallon booster tanks.

We have four regular men and ten volunteers, plus an auxiliary group of 30 men. This group is also a CD rescue squad and has its own rescue truck.

We have two men on duty at all times.

Last fall we put in two-way radio and it certainly took care of our manpower shortage. Now we have fourteen men on duty at all times since everyone is in touch with headquarters at all times.

We have 22 pieces of radio equipment, a 60-watt base station, seven mobile units and 14 MR32 home sets tuned to our Fire Department frequency, 3394 MC.

Calls go out as soon as received in headquarters and are continued from trucks.

We always have men at scene of fire as soon as equipment, just as if we had eight or ten men on duty all of the time. Extra trucks and equipment are ordered as needed, with no delay or confusion. This system seems to be the answer to the smaller city department with a limited budget for manpower, and gives them a chance to build up their equipment with savings on salaries and also makes the departments much more active and efficient.

This seems to me to be the best argument against the idea of combining the duties of the fire and police departments to cut costs of safety departments. Firemen, to my way of thinking, are firemen because they want to be and because they are deeply interested in fire control; otherwise they would not be firemen. You can't make a man a fireman just by assigning him to duty on this or any other fire department. I would guess that this would also be true of policemen.

Radio will cut your costs and make a better department at the same time. After having radio for a year, I don't feel that I would like to try to operate any department without it.

FRED BENNETT, Chief
Hillsboro, Ohio, Fire Department

A Suggestion on Controlling Brush and Forest Fires

To the Editor:

I read an article in your March, 1954, issue on a forest fire in the San Gabriel Mountains northeast of Los Angeles. The terrific amount of destruction and the aftermath of what it did to that watershed area stuck in my mind. In the course of my training at the Royal-Liverpool Insurance Group, I have noted the effects of dry chemical on fire, and feel that its application to a forest fire might be advantageous.

My question is this: Would it be possible to dust the foliage with dry chemical in advance of the fire, using the same method that a crop duster uses. It will not replace the cooling effect of water that is needed to extinguish the fire, but it might be very effective in the fire side of a fire break or a road in dampening the fire and preventing the flame from jumping the break.

Methods that might be used in applying it would be dependent on the terrain, although a plane would seem to be best, in that a larger area could be covered. If it is particularly dry, the application could be preceded by an application of water mist to make the powder stick to the trees. Natural convection of rising hot air would also pick the powder up off the ground and sift it through the burning foliage. The powder might also be applied behind the fire, but this might not be too good as convection again could blow the powder up and over the fire. Its application here would be hit or miss.

I hope that you might see some merit in my thought and that it could be brought to someone's attention who would be interested in it. Due to the destructiveness of forest fires, I feel that anything is worth trying that might help to control it.

Yours truly,
KARL E. JOHNSON

Roselle, N. J.

Egyptian Fire Fighters Meet

The Egyptian Fire Fighters Association of Southern Illinois is one of the oldest, if not the oldest mutual aid organization in the nation, having its origin 29 years ago. It is also today one of the largest in point of area covered. It embraces 30 counties and 115 cities.

The second quarterly meeting of the "E.F.F.A." was held at Ashley, Ill., Tuesday, July 13 last with a large and enthusiastic attendance. President Herbert Bush of Centralia, Ill. presided. Mayor S. G. Berry of Ashley welcomed the guests and the president responded. The distinguished visitors were introduced by Fred P. Haderlein of Carlyle, Ill.

Godfrey Hughes of the So. Illinois Inc., spoke on "The Need of Water in Southern Illinois." Another speaker was Simon Kellerman, Jr., Treasurer of the Illinois Firemen's Association. Following a lunch at the Ashley School, where sessions were held, officers for the coming year were elected.

Nip Brush Fires in the Bud with an FZZ

Be Prepared NOW to Fight Forest Fires with a HALE FZZ Portable Pumping Unit

Above—FZZ Pumping solid stream and fog.

Above and at bottom are two on-the-spot pictures showing a HALE Type FZZ Portable Fire Pumping Unit fighting a brush fire from a moving truck. An FZZ can be mounted or carried on any type of equipment, making it a real "work-horse" for fighting brush, field and forest fires while in motion. Booster tank is used for a source of water.

The Hale Type FZZ is a powerful, sturdy, ready-to-use unit built specifically for fire fighting. Compact, dependable and efficient, it will stand long hours of continuous pumping.

Above—FZZ Relaying through Major Pumper.

Above—FZZ Pumping Foam (Foam proportioner built in if specified.)

The unit will supply from draft, 60 U. S. Gallons per minute at 90 lbs. pump pressure, and up to 150 U. S. Gallons per minute at 30 lbs. It can supply two capable fire streams through 1½" hose lines using nozzle tips up to ½".

Note: Discharge adapter can be supplied for use with 2½" hose.

Available in carrying frame; mounted on two wheels; or mounted on rubber-cushioned steel channels.

Nip Brush Fires in the Bud with an FZZ

● *Write today for FZZ Circular. Ask for Demonstration.*

HALE FIRE PUMP COMPANY Conshohocken, Pa. ● Fire Pumps in All Standard Capacities

YOU GET—

Greater Protection
More Freedom of Movement

in ISSCO's new aluminized asbestos turnout coat

Here's a turnout coat that's light, pliable, heat-reflecting, and water repellent as well. This new ISSCO coat is far less cumbersome on a ladder; far more effective up close to a fire where its highly polished aluminized surface (not mere foil) reflects most of the heat. Coat has wristlets sewn into sleeves, is wool lined to the waist (for winter comfort), and fastens with big easy-to-manage snap hooks.

CLIP COUPON BELOW FOR FREE BROCHURE

when heat is intense

Use ISSCO's heat-reflecting aluminized asbestos hood and gloves. Gives you that extra protection around face and hands in approaching fire and in flash-backs. Hood has built-in helmet—adjustable to size: ¼" laminated safety glass window. Gloves shown are ISSCO 114-AL (One of many styles we furnish).

INDUSTRIAL SAFETY SPECIALTIES COMPANY

8th and Chestnut Sts., Perkasie, Pennsylvania

Manufacturers of

The ISSCO Insulated Fire Rescue Suit
Asbestos blankets in all sizes

Protective clothing for every situation!

Industrial Safety Specialties Co.
8th & Chestnut Sts., Perkasie, Pa.

Gentlemen:
Please send me your new folder describing aluminized asbestos protective clothing

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Missouri Valley Chiefs Meet at Colorado Springs

The Sixteenth Annual Meeting of the Missouri Valley Association of Fire Chiefs was called to order by President Chief Wright Hedges in the General Palmer Room of the Antlers Hotel in Colorado Springs on Monday, June 21, 1954. A full schedule had been planned by Host Chief Fred Lausch of Colorado Springs, President Hedges of Atlantic, Iowa, and the other officers of the organization. On Monday morning there was the usual business of opening such a meeting, including a very impressive memorial service to the members who had died in the preceding year. Scientific meetings began Monday afternoon and continued through Wednesday morning. All presentations were excellent; each showed such careful preparation and thorough knowledge of the subject that it would be out of the question to comment on all of them here, but several deserve special mention.

President Wright Hedges presenting Host Chief Fred Lausch a wrist watch following banquet of M. V. A. F. C. Conference.

Chief George McAlpine of Oklahoma City, Past President of the International Association of Fire Chiefs, discussed the hazards his fire department has faced due to the numerous oil wells in that city and the storage and transportation of petroleum. Hubert Walker, of American LaFrance-Foamite Corp., discussed apparatus maintenance, and shed much light on the new types and classification of lubricating oils and additives. Chief Ed Colglazier of Pueblo, Colorado, talked on the subject: "What most fire departments are confronted with when a major fire develops." As a case in point he told of the battle his department faced August 29, 1953, in the Central Block fire, which destroyed three buildings resulting in $1,000,000 loss.

Chief Ed. Colglazier, Pueblo, Colo., addresses the conference.

This was excellent instruction in fire fighting tactics, since he described the origin and progression of the fire: the deployment of men, hose lines, and pumpers; and showed diagrams and pictures of the fire. Since the fire extended beyond the building of origin and since the loss was large, he concluded that the strategy must have been unsatisfactory, and that another plan of

A "Metropolitan" steamer, vintage of 1898, of the Colorado Springs Fire Department, served as a silent greeter to delegates attending Missouri Valley conference.

attack might have prevented spread of fire into the Central Block. He called for suggestions from the floor; then offered his own plan of how the fire might have been stopped. It might be mentioned here that Assistant Chief Oliver L. Dutcher of the Colorado Springs Fire Department has often remarked that a fire chief never makes a

At the Missouri Valley Fire Chiefs Conference (left to right) were Chief Ray Tiller, Waterloo, Ia., Secretary-Treasurer of the Missouri Valley Association and Past President, International Association of Fire Chiefs; Chief Wright Hedges, Atlantic, Ia., President, M. V. A. F. C.; in foreground, Lt. Dobson, Waterloo, operates a tape recorder.

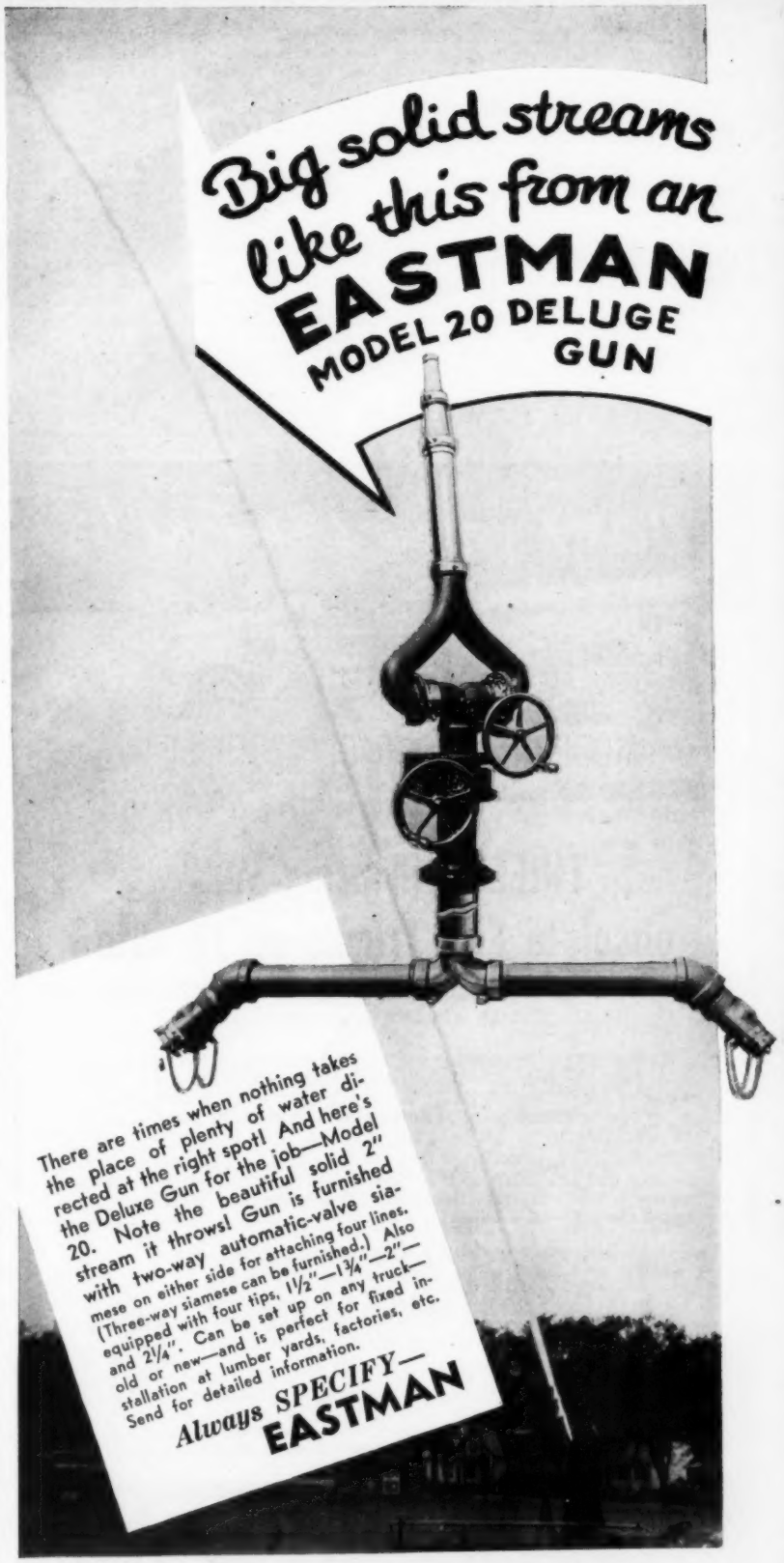
mistake at a fire: he makes the best decision he can at the time based on the information available to him at the moment. To this there is a corollary: It is a rare fire that can't be fought better the next day. An instructive discussion developed, and the concensus of opinion was that the Pueblo Fire Department, faced with an old structure built around an open center well and many plain glass windows overlooking a hot fire at the time of alarm, did very well to prevent a general conflagration.

Training Programs Discussed

Dick Vernor of the Western Actuarial Bureau condensed an entire course in public speaking into his short discourse. One other talk that deserves mention was made by Russell D. Salak, Assistant Chief of the Schuyler, Nebraska, Fire Department, on the subject: "Organizing, training, and holding the interest of volunteer firemen." Chief Salak gave a very human account of his volunteer department and suggested many ideas for preventing a volunteer department from hitting a slump.

A Metropolitan steamer, vintage of 1898, of the Colorado Springs Fire Department, was parked in front of the Antlers Hotel, and a sign on it welcomed the chiefs.

Arriving chiefs registered for the meeting Sunday afternoon, and in the evening were entertained in the Sun Room of the Antlers. Monday evening the chiefs and their families attended a Chuck Wagon Dinner in the Garden of the Gods, following which there was entertainment. The evening left an indelible impression on the group, for the setting is between the gigantic rocks of the Garden of the Gods, the air was crisp and cool at 6,000 feet above sea level, and the entertainment was distinctive and western. On Tuesday evening there was the usual banquet, following a cocktail hour. After the banquet there were no speeches, but officers of the organization and guests were introduced. A wrist watch was presented to


Big solid streams like this from an
EASTMAN
MODEL 20 DELUGE GUN
There are times when nothing takes the place of plenty of water directed at the right spot! And here's the Deluxe Gun for the job—Model 20. Note the beautiful solid 2" stream it throws! Gun is furnished with two-way automatic-valve siamese on either side for attaching four lines. (Three-way siamese can be furnished.) Also equipped with four tips, 1½"—1¾"—2"—and 2¼". Can be set up on any truck—old or new—and is perfect for fixed installation at lumber yards, factories, etc. Send for detailed information.
Always SPECIFY—
EASTMAN

SAMUEL EASTMAN COMPANY, Inc.
CONCORD, NEW HAMPSHIRE

Host Chief Fred Lausch in appreciation for his services in arranging for the meeting.

Election of Officers

Chief Walter C. Campbell, Pittsburg, Kans., was elected President of the Association at its final session on June 23rd. Other officers include: Chief V. L. Crusinberry, Sioux Falls, S. D., First Vice-President; Chief Thomas C. Hickson, Dubuque, Ia., Second Vice-President; Chief Ray Tiller, Waterloo, Ia., Secretary-Treasurer and Director to the International Association of Fire Chiefs.

The following state vice-presidents were also elected: Colorado, Chief Fred H. Lausch, Colorado Springs; Iowa, Chief Harold Stanton, Storm Lake; Kansas, Chief C. W. Brennan, Chanute; Nebraska, Chief Fred W. Walker, McCook; Missouri, Chief John W. Snyder, Kirksville; North Dakota, Former Chief A. F. Putschler, Dickinson; South Dakota, Former Chief, C. E. Zumwalt, Pierre, and Wyoming, Chief A. L. Piper, Casper.

—Lester L. Williams, M.D.

Montreal

(*Continued from page 655*)

probably the highest fire service ladder in use in the United States or Canada.

Two new 100-foot steel ladders are now on order and will be used to replace the wooden ladders of the two original 1930 trucks. These two veterans will then be extensively refitted and put back to work. A sixth complete turntable aerial ladder truck is now on order as well. All high value commercial, wholesale and financial districts will then be serviced by the two-piece ladder company arrangement.

Another Canadian city which favors the European aerial is Quebec City, also afflicted with hills and narrow streets, where a Magirus ladder mounted on a Canadian chassis has been in service since 1935. The fire department of Hull, Quebec, recently purchased a British Merryweather 100-foot aerial mounted on a Thibault chassis by the apparatus firm of Pierre Thibault. This latter unit carries 130 feet of ground ladders in lengths up to 35 feet.

When the first successful aerial ladder, the Hayes, was coming into use in the United States in the late 1800's, the British had not yet found a suitable one of their own. They therefore looked over this new American device which was very similar to the later spring-hoist aerial except that it was raised only by hand power by a worm screw. But after considering its length of over 50 feet from the tips of the horses' noses to the tip of the ladder, they decided it was impractically long. They thereupon began to design their own aerial using similar hand screw raising gear. The question of length was settled with the rear turntable and the ladder extending out over the front of the vehicle, suggested quite likely by the wheeled escape ladder carried on the rear of some of their "appliances" even today.

Electric, carbon-dioxide and other gas-driven raising devices were experimented with in England and Europe, but the spring-hoist was not adopted. As soon as automobile apparatus became suitably developed, the British settled upon a worm-gear raised aerial, driven by a power takeoff from the engine. With a four section ladder and the rear turntable, they had the short length apparatus they needed. The British and European aerial truck has, as a result, evolved as a unit with a length comparable to that of a pumper, a machine specialized as an aerial ladder rather than essentially a city service truck with an aerial ladder added.

The aerials of Britain and Europe are of what we would call commercial chassis type, that is, the aerial is built by specialists in the business and then mounted on various truck chasses according to the country in which it is to be placed in service. Diesel engines are not uncommon, particularly in Germany, where large pumps have frequently been monuted on aerial trucks.

The most common size for these aerials is 100 feet, although Merryweather builds 125 foot ladders, and one postwar ladder in Europe is of 170-foot length and features an elevator for rescue work. Before the German fire brigades were shattered by allied bombings, the 150-foot Metz aerial with a six-section ladder and a mere 35-foot overall length was reported to be a popular model in Berlin. One of these was also put in service in England by the city of Hull before the war. Other brigades throughout Europe have also favored longer ladder lengths than our standard maximum of 100 feet. During the war the British National Fire Service introduced an emergency 60-foot aerial which was hand raised and extended, the ladder being counter-weighted so that it required onlv the weight of several men on the butt to swing the bed-ladder into a vertical position. This all-steel ladder was simple, effective and nearly fool-

"DON'T scrap that Truck !!"

MODERNIZE YOUR OLD EQUIPMENT--- AT GREAT SAVINGS!!!

THIELE will bring your obsolete Fire Trucks up to date

REMODELING SERVICE NOW SUPPLEMENTS OUR COMPLETE LINE OF FIRE APPARATUS EQUIPMENT

Today many old fire trucks are being scrapped unnecessarily and with them goes a lot of good serviceable equipment. This valuable equipment can be utilized through Thiele modernization to compete favorably in performance alongside the most modern of fire fighters.

Unlimited possibilities! The Thiele modernization service is flexible and adaptable to meet most every demand. Each piece of equipment will be exclusively designed to meet your most exacting specifications.

- Old truck body rebuilt and installed on new chassis.
- New bodies of any type or size furnished.
- Old pumps transferred or new pumps added.
- High pressure fog equipment added.
- Restyling of units into squad cars, rescue vans, pumpers, combination units and various other arrangements.

GREAT SAVINGS are yours when Thiele modernizes your obsolete equipment. Now it is possible for low-budget fire companies to have "up-to-date" fire fighting apparatus.

So let Thiele—the originators and designers of the Fog-Kar—make your dream of having a modern fire department a reality.

ATTENTION *Equip. Distributors*

Use our customized facilities for your equip. installations. All franchise rights protected.

W. J. THIELE & SONS, INC.

Pine at Cherry Johnstown, Pa.

Manufacturers and Distributors of Truck Equipment

proof within its obvious limitations.

The principal feature of the European aerial, or turntable ladder in Britain, is the mounting of the turntable and raising mechanism on the truck chassis directly over the rear axle, and the ladder extending forward over the cab rather than to the rear. While this arrangement naturally makes difficult the practical installation of banks of numerous ground ladders on the chassis, it permits the retracted aerial ladder to extend from the rearmost point of the truck (overhanging in most cases) forward over the cab and engine to overhang at the front. In this way the overall length of the unit is no greater than the length of the retracted ladder. A 100-foot aerial truck is thus about 31 feet overall, the length of a retracted four-section ladder and the wheel-base about the same as a standard pumper.

Possibly a disadvantage is the fact that the Magirus and Metz ladders have no turntable platform to rotate with the ladder itself. The controls are located on the side of the raising structure so that the operator stands on the ground while working the ladder and, as the ladder is rotated, he walks around with it. The Merryweather has a small platform for the operator similar to the American turntable platform. All of these aerials are fitted with a small extension on the bed-ladder which drops to the ground. Using this, firemen step directly from the ground onto the ladder.

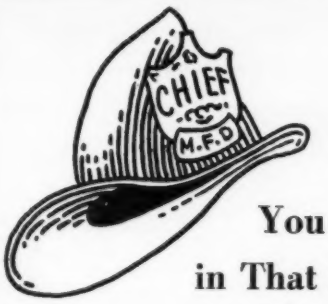
All the principal functions of these rear turntable aerials are performed mechanically, a number of clutches coupling these operations to a power takeoff from the engine. The Magirus uses nine clutches engaged by hydraulic controls, the Merryweather has seven manually controlled and the Metz uses ten. Two speed ratios are provided in the power takeoff of the Magirus and Merryweather ladders. In these two the bed-ladder is elevated by large mechanical screws, one in the former and two in the latter. The Metz ladder is elevated by a dual chain drive working on a quadrant gear. All of these three principal makes of rear turntable ladders use mechanical screw jacks, four in number, and axle locks which prevent any action in the rear springs when the ladder is in use.

Special safety and automatic features of these ladders include automatic gear to prevent extension of the ladder beyond safe limits for the axle of elevation used, a dynamometer strain gauge which warns the operator when the ladder is overloaded and an automatic levelling device which keeps the ladder in plumb in spite of a hilly street of a camber in the roadway. In case of an engine failure, the ladder may be operated manually by auxiliary cranks. Telephone communication between top and bottom of the ladder is frequently provided.

As far as the Montreal Fire Department is concerned, the European type of aerial ladder truck is a success in this otherwise normally North American minded fire department.

Two Firemen Killed

Two members of the White Plains, N. Y., Fire Department met death during a fire which gutted a Main street multiple occupancy building, in an effort to locate and rescue an occupant erroneously reported to be in the structure.



Chief—

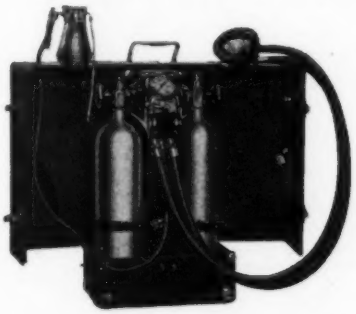
You Have a Flying Start in That Respiratory Emergency

when your department is equipped with

STEPHENSON RESUSCITATORS

Your department should not be without this necessary equipment because Stephenson Resuscitators are the first defence to combat smoke suffocation, electric shock, gas poisoning, heart attack, asthma, etc.

Quick ***Safe*** ***Dependable***



Hundreds of your fellow chiefs throughout the country have learned from experience that Stephenson Resuscitators are the most efficient, simplest to operate and do most for the patient.

Write today for demonstration without obligation or send for FREE booklet F-108 which gives you complete information.

STEPHENSON CORPORATION
RED BANK NEW JERSEY

Makers of the Harger Drunkometer, used all over in industry and police departments including New York

Write for Bulletin 6600-F

WEIGHS ONLY 110 LBS.

MORE **EFFECTIVE** FIRE PROTECTION

CITY • RURAL • FOREST

MODEL 6600 PUMPER—Instantly Self-Priming—No waiting when seconds count
HIGH PRESSURE—Use one or two hard-hitting streams or fire-blanketing fog-spray
LIGHT WEIGHT—Easily carried to source of water or fire area
NEOPRENE IMPELLERS—Pump dirty water as well as clean water—assure long life
POWER—Efficient 4-cycle, air-cooled 5 HP engine known and serviced world-wide
BY-PASS VALVE, SPRING LOADED GREASE CUP, NO LOSS OF PRIME, PLUS MANY OTHER FEATURES

UP TO 40 GPM AT 150 PSI

MARINE PRODUCTS COMPANY
515 LYCASTE AVENUE • DETROIT 14, MICHIGAN

SECONDS COUNT

when your life is at stake

Pocketaire

on the man and in action in only 7 seconds

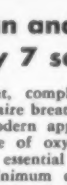
Compact, light, completely self-contained, Pocketaire breathing apparatus provides a modern approach to Fire Attack. Its use of oxygen, the only element in air essential to sustain life, involves a minimum of weight and bulk. A rebreather bag provides the needed "fill air".

"First-in" men, wearing a featherweight 4½ pound Pocketaire, are protected against every breathing hazard by a 5 minute work cylinder and an escape cylinder which assures an additional 5 minute safety margin.

"Follow-up" men, using a 15 minute work cylinder, are also safeguarded by the 5 minute escape cylinder. Even this larger 6½ pound unit is sufficiently compact to permit free entry through small openings.

Recharged for just a few pennies from any standard oxygen cylinder, Pocketaire is an inexpensive, lifesaving, breathing apparatus.

Pocketaire . . . longer life for fire fighters



model #1500 $98.50 goggles and carrying case additional

THE CYCLE-FLO COMPANY

986 Bridgeport Ave., Milford, Conn.

Please send me your booklet on Pocketaire Breathing Equipment.

Name .....

Address .....

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A few distributorships are still available. Write for details.

Persons in the News

Richardson Chief at Stamford

Thomas F. Richardson was sworn in as chief of the Stamford, Conn., Fire Department on June 11, 1954. He succeeds Chief Victor Veit who retired earlier this year at the age of 81, after serving 59 years in the department, 34 years as its head.

Chief Thomas F. Richardson

Chief Richardson was appointed regular fireman in April 1923, and filled various posts as administrative clerk, driver, tillerman, etc., becoming acting captain in June, 1929. He was made captain and administrative clerk of department in November, 1944, which posts he filled until 1951. During this period he served numerous times as acting deputy chief.

He was appointed provisional deputy chief Dec. 19, 1951, and in March, 1952, assigned as acting deputy. Later that year he was made permanent deputy chief. On May 4, 1954, he was appointed acting chief of department and designated permanent chief on June 7, 1954.

Fire Fighting Chaplain Moves

Major Norris T. Morton, Air Force Staff Chaplin, and enthusiast in fire protection, has been transferred from Air Force Flight Test Center at Edwards Air Force Base, Edwards, Calif., to 566th Air Defense Group at Hamilton Air Force Base, California.

Before coming to Edwards A. F. B., Chaplain Morton was stationed at Elmendorf Air Base, Anchorage, Alaska, where he was also unofficial fire protection supervisor.

J. V. Redmond, Lakewood Chief

The new chief of Lakewood, Ohio, Fire Department is Jay V. Redmond, who was assistant fire chief since 1932.

Chief Redmond, oldest in point of service in the department took the helm July 1. He succeeded Chief Charles A. Delaney, who died March 20.

The announcement was made by Mayor A. I. Kauffman shortly after the results of examination were received from the Civil Service Commission.

Chief Redmond was appointed to the department in January, 1917. He was appointed an officer the following year.

He was born Oct. 4, 1894, on Cleveland's West Side, and attended Detroit and Watterson Schools.

It was in March, 1932, when Delaney was named chief, that Redmond was named assistant.

Obituaries

Chief Leo B. Hill Dead

Chief Leo B. Hill, head of the Bessemer, Ala., Fire Department since 1922, passed away on May 24. He had been ill but a short time, following a heart attack. He was sixty-one years of age.

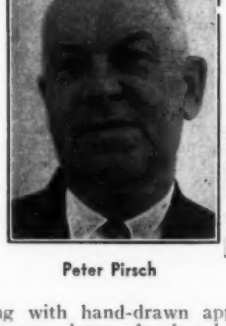
Peter Pirsch Dead

Peter Pirsch, pioneer builder of fire apparatus, died suddenly on July 14 of a heart attack while making his daily visit to the firm he founded in 1900.

Mr. Pirsch, president of Peter Pirsch and Sons Company and chairman of the board of directors, was born March 2, 1866, in Kenosha, Wis.

The veteran manufacturer of fire fighting equipment learned the blacksmith trade while associated with his father, who founded a carriage and wagon factory in Kenosha in 1857.

Pirsch established his own firm in 1900 with a patent on a ladder. The pioneer builder of fire apparatus held many patents for developments in the industry. His invention of the trussed ladder in 1900 proved a success and its principle is still in use today. In 1908 he invented a hose shut-off and door opener which is used by fire departments throughout the world.



Peter Pirsch

Starting with hand-drawn apparatus, the company later developed horse-drawn apparatus; and in 1910 Pirsch introduced a motor-propelled fire truck.

It was turned over to the city of Kenosha, giving this community the first automobile-powered fire engine in the state. The demand for motorized equipment continued and the factory turned over all of its production to this development by 1915 under Mr. Pirsch's leadership.

In 1931, Mr. Pirsch was cited by Congress for saving 16 lives in a Chicago tunnel fire with a smoke ejector. An emergency call from Chicago brought the experimental ejector to the scene in a matter of hours and rescued 16 men who were trapped in a smoke-filled tunnel.

Mr. Pirsch was very active in civic affairs, having served as an alderman for 12 years. He also was a leader in the volunteer fire department of Kenosha. He was elected as an honorary life member of the International Association of Fire Chiefs at the 1944 national convention.

He is survived by one son and two daughters, William R. Pirsch, who for many years has been associated with the company as vice-president and treasurer; Dr. Margaret Pirsch and Mrs. Demi N. Even, all of Kenosha.

Chief C. M. Johnson Dead

Chief Calvin M. Johnson, head of the Knoxville, Tenn., Fire Department, and for fifty-one years a member of that organization, passed away on August 5 after a short illness. He had served as Chief since 1929.

Chief Johnson was born in Loudon County, Tenn., on November 17, 1876. His parents moved to Sevier County when he was a small boy. He received his early education in the schools of that county. Moving to Knoxville early in 1901, he secured employment with the Sanford-Day Iron Works, where he remained until he was appointed fireman in 1903. He was first assigned to the West Knoxville Hose Company. He was promoted to Captain in 1909, and placed in charge of Company No. 5. In 1918 he was advanced to Assistant Chief.

Under the guidance of Chief Johnson, the Knoxville department was built into a highly efficient fire fighting organization. Its personnel grew from 30 to over 190 during his tenure as Chief.

He was instrumental in the passage of two important acts of legislation, the first giving the department the two-platoon system, and the second a revised pension law.

Chief Johnson, long a diligent worker in the International Association of Fire Chiefs, was host to the 1935 conference of that organization. He is survived by his wife, Ess Johnson, who faithfully attended all conferences of the Association with her husband.

Fairfield County Chiefs Meet

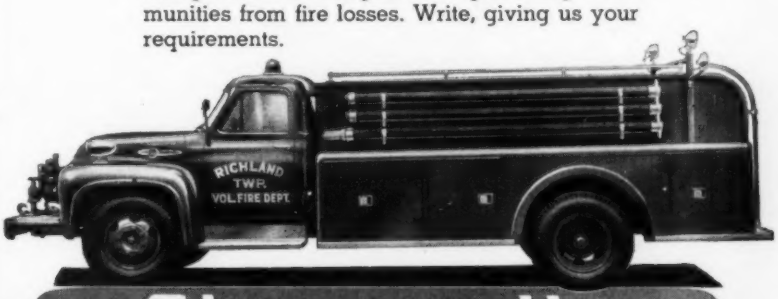
An estimated 800 persons attended the annual dinner and election of officers of the Fairfield County Fire Chiefs Emergency Plan on May 26 in the Elks home at Danbury, Conn. Harold A. Shippey, Chief of the Westport Fire Department, was elected president with Chief Sylvester E. Jennings, of Bridgeport, first vice-president.

Other officers named were Chief Orville Sawyer, Sound Beach, second vice-president; Lawrence Ford, Redding Center, third vice-president; Ex-Asst. Chief William Hennessy, Germantown, secretary; Capt. Eugene Maher, Darien, treasurer; Chief Orville Sawyer, Sound Beach, sergeant-at-arms.

Directors named for two years were Chief Smith, Shelton; Asst. Chief Herbert Unnever, Turn of River; Asst. Chief Louis Catlin, Sr., Shelton, and Ex-Chief Charles Hitchcock, Greenwich. Directors named for one year were Chief R. Emmet Kozubski, Beaver Brook; Chief John Pickering, New Canaan; Chief Horace Walker, Ridgefield, and Chief Homer Kelly, Belltown.

TOM MAGNER

HERE IS a version of the Challenger built to the requirements of Richland Township . . . a 1500-gallon tanker with a two-stage front mount pump. These Challengers are designed and custom-built to carry whatever you need. More and more, speedy, efficient Sharpsville Challengers are protecting communities from fire losses. Write, giving us your requirements.



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STEEL FABRICATORS, Inc.
Sharpsville, Pa.
Established 1860
Incorporated 1907

Builders of Service, Crash and Ladder Trucks • Volume and High Pressure Pumpers • Squad and Emergency Cars • Storage Tanks

got enough EARS?

BE ON THE CONSTANT ALERT

All Departments Can Now Listen to Every Vital Message

MONITORADIO for a thoroughly coordinated 2-way communication system.

Now every member of every department can have radio communication for as little as $49.95

Write today for further information.

- Nation's most complete line of monitor receivers.
- Crystal controlled or tunable for any VHF FM communication system.
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What's Burning

THE following list includes fires of $10,000 and over in the United States and Canada for the month of July, 1954.

Month Ending July 31, 1954

Hermitage, Ark.—Hermitage High School gymnasium, Ambort Tomato Co. shed and dwelling, destroyed.
Magnolia, Ark.—Main building of Partee Lumber Mill destroyed.
Antioch, Cal.—Office building, 608-10 Second street, damaged.
Decoto, Cal.—Lindsay Lumber Co. plant, Almada County, destroyed.
Gridley, Cal.—Gridley Tire Service and adjoining El Nidito Cafe, destroyed.
Los Angeles, Cal.—Apartment building at 5901 S. Compton Blvd., damaged.
Los Angeles, Cal.—Pacific Milling & Lumber Co. plant destroyed.
Oakdale, Cal.—Ranch and feed yard of Frank J. DeBenedetti ranch, Stanislaus County, damaged.
Paramount, Cal.—Reed Grain & Milling Co. granary destroyed.
San Francisco, Cal.—Mel's Drive-In damaged.
San Francisco, Cal.—Superior Box Co. factory damaged.
Santa Rosa, Cal.—Planing mill of Sterling Lumber Company, Sonoma County, destroyed.
Victorville, Cal.—Green Spot Cafe, Robert Shoe store, Elanin's Dress Shop and Deluxe Cleaners destroyed.
Wilmington, Cal.—Watson refinery of Richfield Oil Corp., damaged.
Peyton, Colo.—Peyton School in Eastern El Paso County destroyed. Lightning.
Bridgeville, Dela.—Quality Shirt Factory destroyed.
Bunnell, Fla.—King's Sawmill, destroyed. Motor.
Perry, Fla.—Pinkerton-Hays Lumber Co.'s sawmill and drying shed, destroyed.
Tampa, Fla.—Warehouse of Hamiter Distributing Co., loaded with tons of food products, destroyed.
Claxton, Ga.—Canning plant owned by Evans County and operated by the school board, destroyed.
Lawrenceville, Ga. — Belk-Gallant Department store destroyed.
Louisville, Ga.—Pal Theatre destroyed.
Twin City, Ga.—The Emanuel County Institute School destroyed.
Boise, Ida.—Orange Transportation Co. offices and warehouse destroyed.
Chicago, Ill.—Herman's Sales Co. appliance store damaged. Arson suspected.
Anderson, Ind.—Interior of Ajay Screw Machine Products Co. building, destroyed.
Lebanon, Ind.—Grain elevator owned by Boone Grain and Seed Co. at Max, 7 miles west, destroyed.
Logansport, Ind.—Colonial Rubber Works, Inc., destroyed.
Sullivan, Ind.—International Harvester agency destroyed.
Valparaiso, Ind.—Barn on Col. Robert Murray farm damaged. Sparks from fan motor.
Independence, Ia.—Buildings on Herbert Weber farm, two miles north, destroyed.
Kansas City, Kans.—Leader Clothing building destroyed; adjoining Walt's shoe store and B & G Hosiery Shop, damaged.
Louisville, Ky.—Bradas & Cheens Candy Co. plant damaged.
Trenton, Ky. — Chestnut Seed Co. plant destroyed.
Rumford, Me.—Rumford Daily Times building, the studios of WRUM and Rumford Lumber Co., destroyed.
Chestertown, Md. — Fireworks and munitions plant of Kent Mfg Co. damaged. Explosion.
Boston, Mass.—Great Eastern Packing & Paper Stock Corp. warehouse, damaged.
Peabody, Mass.—Warehouse of Tanner City Tire Co., spread to apartment building, St. John's Catholic Church, Redman's Hall, Ideal Lunch and Post Office, damaged.
Bad Axe, Mich.—Bad Axe Grain Co., two elevators and two warehouses, destroyed.
Grand Rapids, Mich.—Bixby's Office Supply Co.'s office furniture division building damaged.
Jackson, Mich.—Warehouse at plant of Hayes Industries, Inc.
Jackson, Mich.—Jackson Jewelers building, nearly destroyed; adjacent Peoples Clothing Co. and Beck Drug Store, damaged.
McGregor, Mich.—McGregor elevator destroyed.
Mt. Clemens, Mich.—Donaldson building, containing several stores, destroyed.
Williamston, Mich.—Williamston Lumber Co. main building destroyed. Lightning bolt.
Terrebonne, Mich.—Terrebonne Milling Co. plant destroyed.
Farley, Mo.—Building of Pratt Quality Food Farm, fifteen miles northwest of Parkville, Platte County, destroyed. Quantity of liquid ammonia exploded.
Kansas City, Mo.—Parkview drug store damaged. Overloaded electrical circuit.
St. Louis, Mo.—Mississippi Woodworking Co. plant damaged.
St. Louis, Mo.—Plant of Nite-Point Co. in suburban Crestwood, damaged. Spontaneous ignition.
Sugar Creek, Mo.—R. J. Roper building damaged.
Custer, Mont.—Custer grain elevator destroyed.
Atlantic City, N. J.—Four two-story buildings, Planter Peanut Co. store, a Howard Johnson restaurant, Fralinger's taffy store and the Boardwalk Cafeteria, located on the Boardwalk between Virginia and Pennsylvania avenues, damaged. A wooden marquee along the boardwalk front of the Steel Pier, destroyed. The plate glass window on the Boardwalk side of the pier, where General Motors Corp. was holding an exhibition, shattered by heat.
Camden, N. J.—Linden Baptist Church and Sunday School building, destroyed.
Cliffwood, N. J.—Keyport Lumber & Supply Co. plant and buildings, destroyed.
Cranbury, N. J.—Part of plant of the Unexcelled Chemical Co. destroyed. Explosion.
Delran Township, N. J.—Six-section barn and garage at Millside Farm, two miles north of Riverside, destroyed.
West New York, N. J.—B. & A. L. Embroidery Co. damaged.
Bemus Point, N. Y.—Showcase home of Jamestown Industrialist Clyne Crawford at Long Point, damaged.
Brooklyn, N. Y.—Plymouth Food Co., King George Delicatessen; Berger Service; Heights Laundry; Hanscom bakery; B. Bittman jewelry store; St. George Auto Discount Co.; Sharlyne Shop; Charles Gunther photography shop; Hydrotester, Inc.; Local No. 6, A.F.L.; White Social Club and Danzinger Commercial Photographers, damaged considerably.
Middlesex, N. Y.—Building housing Middlesex Valley Industries, Inc., destroyed.
Olean, N. Y.—Houghton Laboratory, Inc., chemical plant damaged.
Syracuse, N. Y.—Hotel Syracuse, damaged.
Denton, N. C.—Silver Valley School destroyed. Lightning.
Goldsboro, N. C.—Wayne Agricultural Works, manufacturer of farm tools and implements, damaged.

POWHATAN

QUARTER TURN SHUT-OFF SIAMESE

COMPACT DESIGN.

POSITIVE AND EASY SHUT-OFF UNDER ANY PRESSURE.

PLATE 175

MADE OF HIGHEST GRADE RED METAL.

MINIMUM UP-KEEP EXPENSE.

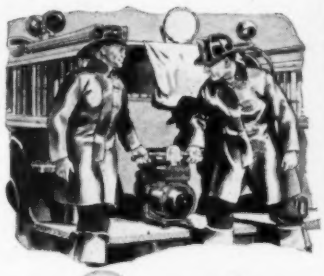
SWIVEL SUPPLIED WITH PIN LUGS OR OUR **SENSIBLE LUGS** (ROCKER LUG TYPE).

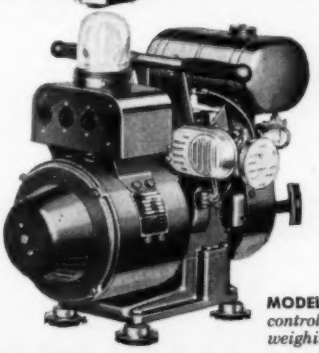
This is but one item in our vast line of precision tooled, strongly built, brass fire-fighting equipment. Since 1892 our single aim has been—improvement of our products—and repeat orders from Fire Departments all over the United States have proven the value of such a policy.

BE SURE TO CONSULT POWHATAN BEFORE PLACING YOUR NEXT ORDER.

POWHATAN BRASS and IRON WORKS
RANSON, WEST VIRGINIA
Phones 93 & 94 Charles Town, West Virginia
Established 1892

High Point, N. C.—Jiffy Manufacturing Co. buildings occupied by Monarch Furniture Co. and B. & H. Upholstery Co. and buildings of Show Lumber Co., damaged.
Lilesville, N. C.—Anson Music Co. and Carolina Furniture Store damaged.
Union Mills, N. C.—Southern Railway depot, two box cars and two coal cars, highway truck tanker, destroyed. Oil truck struck train.
Winston-Salem, N. C.—Warehouse at Dize Awning & Tent Co. destroyed. Explosion in waterproofing department.
Woodworth, N. D.—Woodworth Grain & Supply Co. elevator and adjoining hardware store, damaged.
Cleveland, Ohio.—Building occupied by Omario Recreation and Willys Elyria Auto Sales Co. damaged.
Coshocton, Ohio — Grandstand in Coshocton County destroyed.
Eastlake, Ohio—Supermarket damaged.
Salem, Ohio—Warehouse of Levi Fox Co. destroyed.
Xenia, Ohio—McClellan Hatchery and Feed Center, damaged. Defective electric euipment.
Claremore, Okla.—Frank O'Bannon Feed Co., Frisco Railway freight depot and nine railroad cars, on U. S. 66, destroyed. Match.
Sapula, Okla.—Three business buildings destroyed.
Ashland, Ore.—Lithia Lumber Mill destroyed.
Coos Bay, Ore.—Pacific Skating Rank destroyed. Explosion.
Cresswell, Ore.—Teague Bros. lumber plant destroyed. Spark from welding outfit.
Derry, Ore.—Central Lumber Co. sawmill destroyed.
Eugene, Ore.—Bethel Baseball Park equipment destroyed. Cigarette.
Klamath Falls, Ore.—James Ellingsworth Lumber mill destroyed.
Portland, Ore.—Nendels Club Restaurant damaged. Faulty stove.
Salem, Ore.—Northwest Poultry Dairy Prod. ucts plant destroyed. Faulty electric equipment.
Sprague Rive, Ore.—Sprague River Lumber Co. destroyed.
Bethlehem, Pa.—Marvel Maid Co. lingerie warehouse damaged.
Harrisburg, Pa.—Restaurant of Sam Fenice and Edward Haut, 9 miles east of Route 22, destroyed.
Kissel Hill, Pa.—Barn on farm owned by Keller brothers destroyed.
Lancaster, Pa.—Keiding Paper Products Co. building destroyed.
Malvern, Pa.—Dwelling of William B. Bodine, Pigeon Run Farm, damaged.
Philadelphia, Pa.—Farm buildings on Tom Coolidge farm, three miles south, destroyed.
Pittsburgh, Pa.—Flaming Roller Palace destroyed.
Upper Merion Township, Pa.—Mansion owned by Edgar S. McKaig, damaged. Spontaneous ignition.
Wilkes-Barre, Pa.—Goff Lumber Co. damaged.
Greenville, S. C.—J. F. Graves and Sons Planing Mill destroyed.
Walterboro, S. C.—Corbett Building Supply Co. destroyed.
Rapid City, S. D.—Warren Lamb Lumber Co. saw mill destroyed.
White, S. D.—White Hatchery destroyed.
Sherwood, Tenn.—Sherwood elementary school building destroyed.
Trenton, Tenn.—G. M. & O. Railway packing shed leased by Jack Kinsey Trucking Co., destroyed.
Dallas, Tex.—Sunset Motor Freight Lines building destroyed. Explosion.
Grapevine, Tex.—Donie Chair & Manufacturing Co., damaged.
San Antonio, Tex.—Building at Randolph Air Force Base, housing post office, clothing store, credit union office and thrift shop, destroyed.
Texarkana, Tex.—American Crossman & Conduit Co. plant damaged.
Everett, Wash.—Scott Paper Co. warehouse destroyed.
Goldendale, Wash.—Klickitat Pine Box Mill destroyed.
Sattley, Wash.—Holstrom Lumber Co. mill in Sierra Valley destroyed.
Seattle, Wash.—R. O. Smith Plywood Manufacturing Co., destroyed.
Seattle, Wash.—Western Aluminum Co. destroyed.
Spokane, Wash.—Brotherhood Friends nite club lodge destroyed. Defective wiring.
Toppenish, Wash.—Central Motors building destroyed.
Walla Walla, Wash.—Jones-Scott Warehouse destroyed. Arson.
Huntington, W. Va.—Central Glass Co. plant destroyed.
Kenova, W. Va.—Crude Oil unloading dock of Ashland Oil & Refining Co. damaged. Crude oil line broke and ignited.
Hayward, Wis.—Sawmill of Owen Lumber Co. plant and some adjoining buildings and lumber piles, destroyed.
Cowpeecee, B. C.—Nelson Cannery destroyed.
Edmonton, Alta.—William Troock Furniture fac-





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ELECTRIC PLANTS
Independent Source of Electricity

Aids fire fighting and rescue work

Municipal and volunteer fire departments use portable model for floodlights, power tools, resuscitators, smoke eradicators, rescue equipment. Develops 1500 watts. Fits into small space. Equipped with 4 receptacles, pilot light, double carrying handle. Rubber-tired hand truck available. Other sizes, 500 watts to 30 KW. Also stand-by models to operate siren, signals, when central station power is cut off. Write for folder 14-S.

MODEL 1.5M25, *1500 watts, 115 volt AC. Manual control. Weight 130 pounds. Also 115 volt DC weighing 101 pounds.*

Kohler Co., Kohler, Wisconsin. Established 1873

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PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS

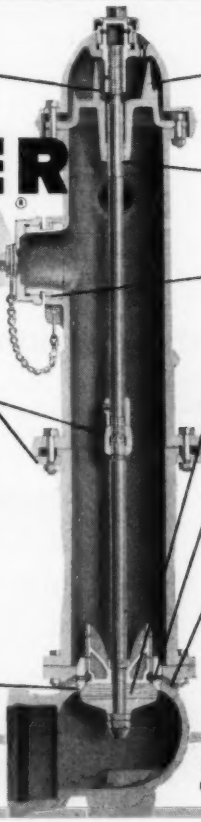
Oil Reservoir — Filled through pipe plug in bonnet — assures positive lubrication of stem threads.

MUELLER

AWWA Improved
FIRE HYDRANT

Safety Stem Coupling and Safety Flange — Coupling and flange break on impact, preventing damage to stem and barrel. Permits convenient facing of nozzles. Extension sections may be added or upper barrel may be changed from two-way to three-way hydrant without digging or water shut-off.

Bronze Seat Ring — Straight threads for easy removal.



Dry Top Design — Prevents freezing of stem threads.

"O" Ring Seals — Make permanent water-tight seal around stem.

Breech Locked Nozzles — Interlocking lugs prevent blowout.

Compression-type Main Valve — Closes with water pressure.

Double Drain Valves — Integral part of main valve assembly.

Double Drain Openings — Force flushed each time hydrant is operated.

Write for Catalog A-201 today or contact your Mueller representative.

MUELLER CO.
Dependable Since 1857

2501 Chestnut St., Chattanooga, Tennessee

tory and showroom, damaged. Lightning.
Field, B. C.—Queensville garage, grocery and offices of a construction company in this North Bay district community, destroyed.
New Westminster, B. C.—Four-story Army-Navy store destroyed.
Essex, Ont.—Building containing a store, meat market, restaurant, and two apartments, destroyed.
Eton, Ont.—Main logging camp of Gillette Logging Co. destroyed.
Georgetown, Ont.—Glen Williams Knitting Mills destroyed.
Leaside, Ont.—Equipment warehouse of George Hardy Co., Ltd., destroyed.

Selenium Fire Hospitalizes Two Los Angeles Firemen

Two Los Angeles firemen were hospitalized and a number of others placed off duty following a fire at the International Rectifier Corp., where they were overcome by selenium fumes.

The plant manufactures selenium rectifiers, electronic devices for converting alternating current to direct current. They are made by coating aluminum plates with selenium, overlayed with a silver alloy of bismuth, tin and cadmium. The devices are then placed in the "fixer," which establishes the polarity and also brings out defects indicated by small molten drops of the coating melting off.

The fire was caused by a molten drop falling upon a combustible rack on which the plates rested in the fixer department.

Selenium is a member of the sulphur family and is a recovery by-product of the copper smelting and refining industry. The fire service can expect to encounter it in metal reclaiming plants as well as in radio and television parts houses and storage warehouses.

According to "The White Sheet," publication of the Los Angeles Fire Department's fire prevention bureau and edited by Captains Leo Najarian and Don Wilson, recommended fire prevention measures include:

1. Post signs at entrances advising the need of breathing apparatus and the danger of using water on high voltage equipment.
2. Provide at least two gas masks.
3. Provide signs instructing employee on proper procedures in case of emergency.
4. Provide proper extinguishers with suitable instructions for their use.

PAUL DITZEL

NOTIFIER is copied but NEVER EQUALLED!

We dare you to compare NOTIFIER with any fire detection equipment on the market. Compare them piece by piece, part by part, and **then compare them for service and dependability** — NO MANUFACTURER OF FIRE DETECTION EQUIPMENT HAS EQUALLED NOTIFIER'S DEVELOPMENTS!

World's First and Best U. L. Listed

Fully automatic fire detection system — complete from protected property into fire station control panel.

Designed to meet any requirement

Notifier is designed to meet state and municipal requirements in multiple dwellings, hotels, hospitals, schools, factories, institutions, nursing homes, etc. DEALERSHIPS AVAILABLE.

Your Inquiries Are Invited — Write To

NOTIFIER MFG. CO.

Dept. A-9
239 South 11th Street
Lincoln, Nebraska

Chemist Uses His Own "Medicine"

On July 8, about 6:30 A.M., while shaving, J. H. Wheeler, President of the Eseential Chemicals Co., Milwaukee, Wis., smelled oil and, upon investigating, found that his indoor oil tank which supplies oil to his oil burner, had sprung a leak during the night.

Mr. Wheeler, manufacturer of "Prev," a petroleum dispersant, employs a solution of it to make fuel oil non-flammable before flushing into sewer.

Because of high ground-water levels existing as a result of recent heavy rainfall, Mr. Wheeler had plugged the basement drain to prevent any back pressure inflow which is common in some of the Milwaukee suburbs. As a result about three inches of fuel oil had accumulated on the basement floor.

He immediately called the suburban fire department. They suggested that the oil should first be treated with "Prev" (manufactured by Mr. Wheeler), to make it non-flammable, and the mixture then flushed into the sewer. Mr. Wheeler inquired whether or not they had a supply of "Prev"; of course, they did, although the City of Milwaukee and adjacent City of West Allis Fire Departments maintain a stock of the liquid at all times for such emergencies.

Mr. Wheeler had the night before returned from the General Motors Corp. at Detroit, who are regular users of "Prev," and therefore still had a supply of samples in his car.

He mixed up a solution in a pail, applied it to the oil, which thereupon became non-flammable, and flushed the mixture into the sewer.

Convention Dates

Aug. 20—FLORIDA STATE FIRE COLLEGE, Fourth of four sessions, Ocala, Fla. Director, W. H. Barnett, Superintendent, Florida State Fire College, P. O. Box 785, Ocala, Fla.

Aug. 20-22—OHIO STATE FIREMEN'S ASSOCIATION. Annual meeting, Youngstown, Ohio. Secretary-Treasurer, H. E. Miller, Box 35, Mantua, Ohio.

Aug. 22-24—NEW YORK STATE PERMANENT FIREMEN'S ASSOCIATION. Annual meeting, Fulton, N. Y. Secretary-Treasurer, Robert E. Mills, 420 Plymouth Drive, Syracuse 6, N. Y.

Aug. 23-27—TENNESSEE STATE FIRE SERVICE SCHOOL. Annual meeting, Middle Tennessee State College, Murfreesboro, Tenn. Directors, H. S. Elkins, W. A. Seeley, Fire Department Instructors, 215 Chestnut Street, Chatttanooga, Tenn.

Aug. 25-28—MONTANA STATE FIREMEN'S SCHOOL. Annual meeting, Polson, Mont. Director, Clayton Brown, Chief of the Fire Department, Polson, Mont.

Sept. 4-6—NORTHEASTERN PENNSYLVANIA VOLUNTEER FIREMEN'S FEDERATION. Annual meeting, Taylor, Pa. Secretary, Harry Armstrong, 134 Washington Street, Taylor, Pa.

Sept. 7-10—MARYLAND SHORT COURSE FOR FIREMEN. Annual meeting, University of Maryland. For information, contact Robert C. Byrus, Director, Fire Service Extension, Fire Service Building, University of Maryland, College Park, Md.

Sept. 10-12—OHIO FIRE CHIEFS' ASSOCIATION. Annual meeting, Akron, Ohio. Secretary-Treasurer, Chief William H. Cheesman, Harrison Township, Dayton, Ohio.

Sept. 11-12 (tentative)—SOUTHERN WISCONSIN AND NORTHERN ILLINOIS FIRE SCHOOL. Director, Norris T. Ames, Insurance Building, Madison, Wis.

Sept. 13-17—VIRGINIA STATE FIRE SCHOOL. Annual meeting, Norfolk, Va. Director, Clay A. Easterly, Fire Marshal, P. O. Box 112, Martinsville, Va.

Sept. 13-17—OHIO STATE FIRE SCHOOL. Annual meeting, Ohio State University, Columbus, Ohio. Further information can be obtained from Wayne C. Jenkins, Assistant Fire School Director, Division of State Fire Marshal, Columbus 15, Ohio.

Sept. 14-15—IOWA FIREMEN'S ASSOCIATION. Annual meeting, Independence, Ia. Secretary, Carl H. Fuchs, 2749 Kinsey Avenue, Des Moines, Ia.

Sept. 14-17—INDIANA STATE FIRE SCHOOL. Annual meeting, Purdue University, Lafayette, Ind. Director, Francis W. Hartman, Chief of Fire Training, Purdue University, Building FWA7, West Lafayette, Ind.

Sept. 17-18—JEFFERSON COUNTY VOLUNTEER FIREMEN'S ASSOCIATION. Annual convention and tournament, Deferiet, N. Y. Secretary, Jack Farrell, 418 Merrick Street, Clayton, N. Y.

Oct. 4-7—INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. Annual meeting, Atlantic City, N. J. Secretary-Treasurer, Irwin Shulsinger, 130 West 42nd Street, New York, N. Y.

Oct. 8-10—DELAWARE COUNTY FIRE SCHOOL. Annual meeting, Essington, Pa. Director, Chief Russell B. Wentzell, Fire Headquarters, Lansdowne, Pa.

Oct. 12-14—ILLINOIS FIREMEN'S ASSOCIATION. Annual meeting, Evanston, Ill. Secretary, R. W. Alsip, P. O. Box 8, Champaign, Ill.

Oct. 12-15—KANSAS STATE FIRE SCHOOL. Annual meeting, University of Kansas, Hutchinson, Kans. Director, Gerald Pearson, Director, University of Kansas Extension Classes, 111 Fraser Hall, Lawrence, Kans.

Oct. 14-16—ARIZONA STATE FIRE TRAINING SCHOOL. Annual meeting, Phoenix, Ariz. Director, Harry C. Bigglestone, District Engineer, Board of Fire Underwriters of the Pacific, Luhrs Building, Phoenix, Ariz.

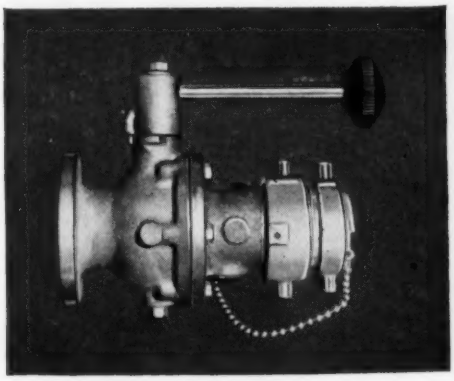
HALE TYPE "BL" SUCTION VALVES

Also Available

The Hale Ball-Type "BL" Valve is also available as a Suction Valve, handy for use in pumping from hydrant or for relaying from one pumper to another.

Picture shows 2½" "BL" Suction Valve with pin-lug swivel and pin-lug plugs, with female National Standard Thread. Special threads (within range of casting) at slight extra cost.

Valve is also available with 2½" Navy-Type slotted swivel and slotted plug.



Above—View of 2½" Hale Ball-Type "BL" Suction Valve shown with female National Standard Thread and Pin-Lug Plug and Chain. Plug and chain are optional.

Outstanding Features

- **Opens and closes easily at all pressures.**
- **Will hold high pressure or vacuum.**
- **Circular Venturi section through valve cuts flow loss to minimum.**
- **Not sensitive to dirty water.**
- **Easy and inexpensive to service . . . No "grinding in."**
- **Slight twist of handle locks valve into any desired position for gating.**

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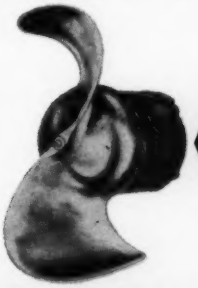
Fire Pump Co.
Conshohocken, Pa.

Hale Fire Pumps are built in all Standard Capacities.

Revolutionary New Principle Increases Fire-Fighting Efficiency!

● The Super Vacuum Smoke ejector is a powerful portable fan unit designed especially for fire departments. This design is a new and revolutionary principle in moving air. Several thousand Super Vacuum Smoke ejectors are in use throughout the United States and Canada. Controlled ventilation is new and very necessary in fire fighting. Years of service and satisfied users are your best guarantee for any merchandise.



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● The secret of Super Vacuum is the patented fan blade. Conventional fans chop the air and push it back. Whereas the Super Vacuum fan blade is a perfect spiral air screw which creates a partial vacuum, suction is created over the entire face of the blade and the air or smoke is discharged in a high velocity spiral. There are no dead spots—that is why Super Vacuum outperforms other fans twice its size.

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Write for Catalog 341

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MODEL No. 9

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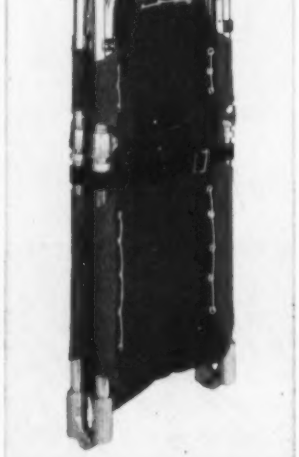
AND A COMPLETE LINE OF AMBULANCE COTS. *We Manufacture All Kinds.*



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Convention Dates

Oct. 17—GREAT LAKES ASSOCIATION OF FIRE CHIEFS. Annual meeting, Rice Hotel, Houston, Tex. Secretary-Treasurer, Chief Elmer Stough, 605 Fourth Street, Lorain, Ohio.

Oct. 18-20—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting, Lincoln, Neb. Secretary-Treasurer, Russell D. Salak, P. O. Box 312, Schuyler, Neb.

Oct. 18-21—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual meeting, Houston, Tex. Secretary-Treasurer, Chief Daniel D. Tierney, 8 Robbins Road, Arlington 74, Mass.

Oct. 19-20—INTERNATIONAL FIRE BUFF ASSOCIATES, INC. Annual meeting, Houston, Tex., during the I. A. F. C. Conference. Secretary, E. R. Damaschke, 916 West Marshall Avenue, Ferndale 20, Mich.

Oct. 19-22—FIRE ADMINISTRATION AND PERSONNEL MANAGEMENT CONFERENCE FOR PAID AND VOLUNTEER FIRE OFFICERS, an 18-hour school with sessions from 4 to 6 P.M. and 7 to 9 P.M. School to be conducted by the Extension Division of the University of Wisconsin, Madison, Wis. Registration fee $6.00.

Nov. 16-18—SYMPOSIUM ON FIRE FIGHTING, to be held at the U. S. Naval Civil Engineering Research and Evaluation Laboratory, Port Hueneme, Cal. Requests for further information should be directed to Officer in Charge, Code 794, U. S. Naval Civil Engineering Research and Evaluation Laboratory, Port Hueneme, Cal.

Dec. 9-10—ILLINOIS FIRE CHIEFS ASSOCIATION. Annual meeting, Rockford, Ill. Secretary, Chief Herbert Bush, Fire Department Headquarters, Centralia, Ill.

First Major 1954 Brush Fire for Los Angeles

First major brush fire of 1954 swept through the Verdugo Hills in back of the Los Angeles suburb of Burbank on the holiday afternoon of July 5.

A number of expensive homes in several new Burbank residential sub-divisions and a drive-in theatre were threatened by the fire, probably started by a careless smoker, which broke out in Stough Park.

Nearly 150 acres of watershed were burned over before units from Burbank and the Los Angeles City and County Fire Departments brought the blaze under control.

County and City fire units responded on the first alarm even though the fire was in Burbank because the mountain area is in the so-called "initial action" zone.

Eight engine and tank units under Batt. Chief Wally Newcombe, head of the L.A.F.D. Mountain Patrol, were dispatched while six engine companies from L. A. County under Chief Keith E. Klinger and Asst. Chief Roland W. Percey responded to assist five Burbank companies under Chief William J. Taylor.

Four County juvenile forestry crews also were on the fire lines along with one L.A.F.D. bulldozer and two County "cats."

Smoke from the blaze was visible throughout the L.A. area and lookouts in the Cleveland National Forest near San Diego reported spotting the pillar of smoke looming up in the sky.

Thousands of holiday spectators watched the fire, but were kept out of the danger area by efficient police work. Asst. Chief Des Barton of the County F.D. praised the work of police in keeping traffic lanes open for fire apparatus.

—CLIFF DEKTAR.

Ventilation

(*Continued from page 659*)

burn, giving off considerable smoke and heat.

At 5:30 A.M. the Fire Alarm office was notified Mr. Pirsch was en route to Chicago with his smoke ejector. At 7:10 it arrived and after some difficulty in assembling the flexible tubes, the machine was placed in position. When in operation only a few minutes it was noticed that it was clearing the shaft to the tunnel as the lights became visible at the different levels; and soon the bottom of the shaft was discernible. After operating 20 or 30 minutes it was decided that the air pressure in the tunnel be shut off for a moment or two (believing this might aid in subsiding the smoke). Not more than three minutes had elapsed when noises were heard in the tunnel and figures seen on the cages below. When the cage reached the surface 16 imprisoned men, including seven firemen, were aboard.

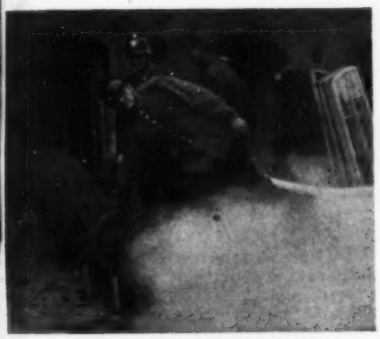

Photo courtesy Chief Carl Astrom

Contrary to general opinion, European fire brigades use both portable and heavy duty mobile smoke removers and blowers. Note the discharge from this electrically driven ejector, of the Helsingfors Fire Department.

A quick check showed all firemen accounted for except Captain James O'Neill of Ladder 14. His body was later recovered through one of the emergency shafts dug through the top of the tunnel by members of Ladder 31 and Squad 6.

The sixteen men had barricaded themselves behind a safety bulkhead door of the air chamber. There they huddled while the ejector drew out the smoke and fumes from the bore leading to the exit of the shaft. Trapped for fourteen hours, the men managed to escape alive after about fourteen minutes operation of the Pirsch ejector.

At one time, Mr. Pirsch thought his apparatus would go out of service for the main pipe had become red hot. But moisture from the tunnel, that was carried up with the smoke, cooled the metal tube. So powerful was the suction that even pebbles from the tunnel were discharged from the outlet. The ejector operated for six hours at the shaft.

The fire was finally extinguished but not until it had smoldered for nine days, while small streams of water were poured into the shafts that were dug to enable firemen to reach the fire.

Conclusions and Operating Practices

The experience of fire departments, both paid and volunteer, with air movers

Champion Fire Apparatus

A highly efficient pumper apparatus with the Champion Three Stage Centrifugal Pump powered by Diamond T. The Pump is the Type SH750 which delivers 750 gallon Underwriter performance plus 60 gallons per minute at 850 lbs. for high pressure fog.

Or this Darley Apparatus is also available in Underwriter capacities of 600 GPM and 500 GPM. Modern commercial truck motors have adequate power for either 750, 600 or 500 GPM pumps.

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CHAMPION FIRE TRUCKS and FIRE PUMPS

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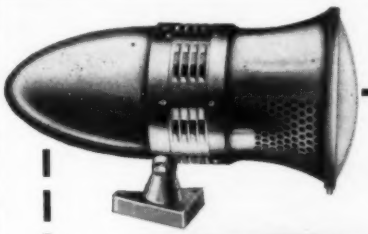

MODEL 20 SIRENLITE for Emergency Vehicles

Siren sounds a penetrating warning, red light automatically flashes authority. Traffic opens instantly, day or night. FREE ROLLING feature.

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Built by proud craftsmen to the highest standards of precision manufacturing . . . utilizing materials of finest quality . . . Sterling Sirens give year-after-year of unsurpassed dependability and satisfaction.

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Quick acceleration, power-plus . . . Model M really gets the boys out in a hurry! Used by championship companies from coast to coast. A dependable, heavy-duty siren built of the finest materials throughout.

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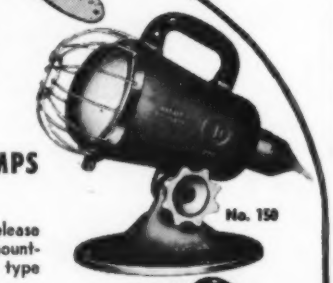
Patented

Circle-D portable flood or spot lights. Designed and built for the tough assignments of any emergency. Circle-D lights are preferred by emergency crews for their compact size that makes them easy to handle and carry as well as store on emergency trucks. Circle-D portables with full power sealed beam lamps are available for 200 - 300 - 500 - 750 and 1000 watt. For the finest in portable lighting insist on Circle-D.



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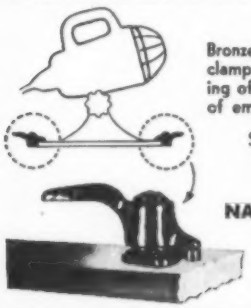
QUICK RELEASE HOLD DOWN CLAMPS



Bronze Chrome plated quick release clamps are available for easy mounting of Circle-D lights on every type of emergency equipment.

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FIRE-FIGHTING GETS A VERSATILE ALLY

UNDER DOCKS AND BRIDGES

IN DEBRIS-FILLED WATERS

IN SHALLOW MARSHY AREAS

UNDER FLOOD CONDITIONS

This JET NOZZLE

Does Everything!

in the NEW KERMATH HYDROJET

AVAILABLE WITH KERMATH 61 H.P. SEA-JEEP ENGINE

This amazing new propulsion unit has been developed to propel water craft without a propeller or rudder by taking water from outside the boat and discharging it as a high speed jet stream under the stern.

A simple connection provides a high or low pressure water stream for fire fighting, using standard hose. Because there are no moving parts under water, a Hydrojet-powered boat can operate with 100% efficiency in shallow and debris-filled waters, beneath docks and bridges, in marshy areas and under flood conditions where ordinary fireboats would be at a disadvantage.

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both as ejectors, and blowers, in relieving contaminated atmospheres has been sufficient to attest the value of mechanical, or forced ventilation. Use of both the larger, mounted mobile units, and the smaller, more maneuverable portable air movers is increasing but at a retarded rate.

This is primarily due to (1) lack of familiarity with the principles and practices of mechanical ventilation and (2) lack of knowledge of the type and kind of equipment essential to efficient mechanical ventilation.

It is evident that more scientific knowledge of the application of powered air movers to venting fires and smoked charged areas is needed by the fire service. There is need of more practical field trial and experimentation, to better relate the manufacturers' air movers to the requirements of the fire service. Thus far, no standards have been determined whereby fire fighters can gauge the removal of contaminated atmospheres, and the effect of the injection of fresh air into contaminated atmospheres. Here is a very broad field of study for the technicians.

The use of smoke removers and fresh air blowers will not take the place of natural ventilation but they may be complementary to it. Nor will their application lessen the need of the fire fighter coming to grips with the fire, to extinguish it. Such mechanical facilities will only make it easier for him to make entrance, locate and rescue victims—and find the fire.

A factor that has been almost universally overlooked is the reduction in smoke damage through powered, or mechanical, ventilation. Every fire officer knows in a general way that good ventilation helps materially to enable fire fighters to locate, confine and extinguish a fire, and that this faster extinguishment tends to minimize fire losses, including damage by both fire, and attendant smoke and water. But few understand that forced ventilation applied with or without natural ventilation will not only reduce smoke losses, but properly applied with odor dispellants following a fire, will materially enhance salvage and reclamation.

Chief Fred J. Wells of Fargo makes this statement: "During the past year and a half we have reduced our smoke damage claims on an average of 40% through the use of smoke extractors. On several occasions, 100 per cent; or, in other words, no claims paid or submitted."

This has been accomplished through diluting and extracting the smoke. This is done three ways: (1) By a rapid removal of the smoke from within the building; (2) by blowing large amounts of fresh air into the building; and, (3) by a combination of the first and second method.

Chief Wells department employs all three ways, but starts with the first, or as rapid a removal as possible. This is done to lessen the amount of smoke which otherwise *would remain in contact with the materials and contents within the building.*

Chief Wells reminds us that *smoke does not hold its heat long.* Hot smoke will give up its heat to walls, floors and contents. He believes that temperature plays a very big part in the penetration of smoke into materials, in the depositing of soot on materials and in the retention of smoke odors themselves by stock.

YOU...*may be up on a ladder but you're . . . "Never out on a limb" with a* MANN Axe

When you swing a MANN AXE you can feel its perfect balance and its fast-slashing edge. These craft-made Fire Axes carry plenty of "authority" when you're in a pinch. YOU MIGHT AS WELL HAVE THE FINEST . . . WHEN LIVES DEPEND ON IT!

Write Dept. FE-8 for your new illustrated catalog sheet of MANN'S Fire Axes.

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Making America's VERY FINEST Axes Since 1843

Summed in a few words, Chief Wells' theory is *"Try and keep the smoke on the move, or stirred up and off the contents.* As long as it is not in contact with the contents, it is not causing (smoke) damage to them." This philosophy of reduction of collateral, or by-product losses caused by fire and fire extinguishment, should be carried further. At present, the dollars and cents relationship between fire damage and smoke damage cannot be formulated with any degree of accuracy. However, many authorities always look forward to smoke damage leading fire damage in as the majority of minor fires (some classify it as high as 94%) which are extinguished with something smaller than a 2½-in. hose line. This may sound extreme—but insurance adjusters will admit that this holds true in many types of occupancies.

Ringling Circus Disaster Claims Settled

The 10th anniversary of the Ringling Brothers-Barnum and Bailey Combined Shows fire in Hartford, Conn., was marked at Bridgeport on July 6 by the virtual conclusion of Superior Court litigation based on the fire and panic in which 169 persons lost their lives and approximately 500 were injured.

Except for a few formalities, legal proceedings resulting from the worst disaster which ever struck Connecticut, and also the circus, came to an end when Judge John T. Cullinan approved a stipulated judgment for payment of $100,000 fee to Julius B. Schatz, of Hartford, as counsel for Edward S. Rogin, of the same city, who was appointed receiver for the circus after the fire. The fee will be paid by the circus.

Mr. Rogin was appointed receiver for the circus a week after the fire and served until last December. The circus continued to operate during the receivership and paid off all claims in accordance with recommendations by a board of arbitration established by the Hartford county bar. Approximately $4,000,000 was involved in claims for deaths and injuries resulting from the tragic fire.

TOM MAGNER

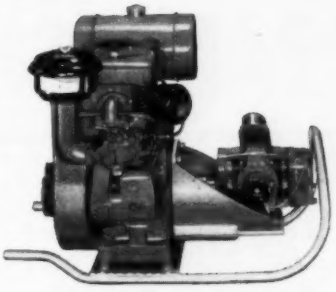
News of the Manufacturers

(*Continued from page 674*)

21. Fire hazard—storage of sodium nitrate.
22. Fire hazard—sulfur.
25. Transformer oil fires in crushed stone.
26. Recommended fire protection of liquified petroleum gas storage, unloading and processing areas.
27. Fire hazard—aircraft flares.
28. Nitrogen as an expelling agent for dry chemical fire extinguishers.
29. Temperature correction chart for checking pressures of 110 cu. ft. and 220 cu. ft. nitrogen cylinders.
30. Temperature correction chart for checking pressures of 400 cu. ft. nitrogen cylinders.
31. Carbon dioxide cartridges.
32. Natural gas fire tests.
33. Effect of dry chemical extinguishing materials on the viability of seeds.

Copies may be obtained by writing Publications Manager, Ansul Chemical Company, Marinette, Wisconsin.

PACIFIC PUMPERS
famous for power plus portability



The WX-10 is a heavy duty general utility pumper built for the toughest service conditions. The 7½ hp engine puts out exceptionally good volume and pressure . . . up to 32 gallons per minute at 250 lbs. pressure.

With "sled-type" mounting and weighing only 150 lbs., the WX-10 has the portability and maneuverability of a much smaller pumper . . . even in rough terrain. Equipped with electric starter the WX-10 is ideal for tanker use and other semi-portable applications.

Dimensions:
Length 30". Width 21". Height 22".

Weight:
150 lbs. (with starter 170 lbs.)

Performance:

Pressure	50	100	150	200	225	250
Gallons per minute	40	38	37	36	35	32

PACIFIC "Pacolized" Hose

is a made-to-order partner for all portable or emergency water supply equipment . . . the best lightweight hose you can buy. "Pacolized" Hose is permanently mildew-proof and rot-resistant, the most flexible hose of its type.

Specify "Pacific" when you buy pumpers, hose and accessories . . . write to "Pacific" for full information on the WX-10 and the full line of portable fire equipment.

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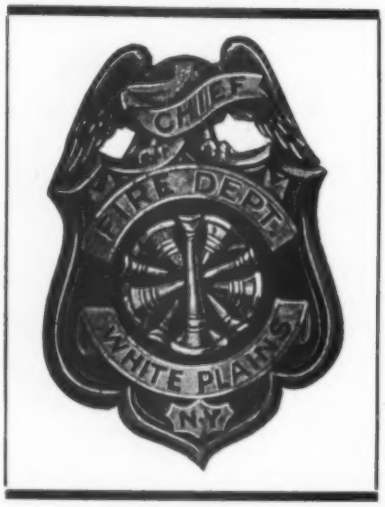

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Write for latest catalog and price list.

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The WATCH DESK

Overhauling the firemanic news of the day

by ROI B. WOOLLEY

Deaf Mute Saves Wife by Writing

An elderly Cleveland man and his wife, both deaf mutes, were saved from their burning home July 1 when the husband scribbled "wife" on the back of a magazine to direct firemen to an upstairs bedroom so they could rescue her.

A neighbor discovered the fire and banged on the door of the home with a stick, hoping to 'rouse the deaf occupants by the vibrations. Edwin Hughes, 75, finally answered the call and lip-read the warning.

As Mr. Hughes turned to re-enter the house to rescue his wife, he was forced back by flames. Firemen had to drag him away from the structure. But his persistent motioning brought attention and got action. The neighbor brought a pencil and magazine and Mr. Hughes hastily scribbled "wife"!

Firemen fought their way to the bedroom where they found Mrs. Hughes, 70, cowering in a corner. Heat had already blistered paint.

"Dog-Barking Firemen"

Up New England-way they refer to the "dog-barking skipper" as the offshore salt who could always find his way through the thickest fog because he knew the bark of every dog along the coast.

Now comes the "dog-barking fire fighters"—of up-state New York.

If it weren't for the dogs of this particular Village, there's no telling when the vamps of the community fire force would get to a fire.

Recently Harry Kelley's house caught fire. The wind was coming from the wrong direction and volunteers in some part of the village couldn't hear the siren atop the firehouse. But the sensitive ears of the neighborhood dogs heard it. And they sounded the "K-9" alarm, yappity yapp!

That was the call to duty for the local fire force. They responded post haste to the Kelley house and doused the flames.

Thus is fire fighting truly "going to the dogs." But shucks, say the volunteers of this particular community—it's nothing unusual. They often have to depend on the dogs, when the wind's wrong!

* * *

Troubles Never Come Singly

Troubles don't seem to come singly to the volunteer fire department of Lealman, Fla. Not so long ago dispatcher Howard Weeks received a report of a spreading grass fire. He sounded the siren—or attempted to—but it wouldn't wail.

Then Weeks manned a fire truck alone and hustled to the address given. No fire. .

A bit later and some blocks away he found the fire—but in his haste he backed his apparatus into a new automobile parked at the curb.

To make the day complete, Weeks found that another member of the fire department, Ben Highnote, had started the fire to clear off some grassland. He and Highnote finally got it out.

We suppose that Highnote "accompanied" Weeks on the truck as it returned to quarters.

* * *

"Flames Flickered in His Mind"

To the derelicts he helped from the smoke-filled Salvation Army shelter at 535 West 48th street, Manhattan, Edward Eugene Campbell was a hero. But to fire investigators, who spotted him for a firebug, he was a pain in the neck.

Campbell got a job at the shelter in April last, working as elevator operator and watchman in the eight-story building. He was on duty there May 6th when fire was discovered in a 7th floor mattress room. Ten days later another fire started in a basement room. Again firemen got there in time, and again building employees were questioned, including Campbell. On May 24th last, flames spread through the basement once more. The 200 homeless men in the shelter were awakened as Campbell went from door to door sounding the alarm. As smoke swirled up from the basement, he led old men to the elevator, calming them to prevent panic. He made several trips up and down in the elevator until the building was cleared of occupants and firemen had the blaze under control.

Campbell, questioned again, told conflicting tales. Then, under cross questioning he confessed. Flames had flickered in his mind as long as he could remember, he said. He was arraigned on an arson charge and sent to Bellevue Hospital for mental observation. His legal aid counsel said Campbell had "an uncontrollable urge to set fires, and gets a thrill at the noise of the fire engines and the screeching of sirens."

It was disclosed the 24-year-old Campbell had set more than 20 fires in Williamsburg, Brooklyn, earlier this year, most of them in baby carriages and tenement hallways. The final blaze in the shelter did about $2,000 damage.

* * *

Hot Off the Tape

In Glendale, Calif., John L. Harris, seeking to evacuate bees from a chimney, climbed to the roof and dropped down a gasoline-soaked rag, unaware that coals still glowed in the fireplace. Resulting blast blew both bees and bricks into the living room, started a fire. But Mrs. Harris in another room and Mr. Harris on the roof top escaped injury. The bees? Oh, they got hot under the collar, and left! . . . The sun's rays ignited chemicals on a concrete platform of E. I. duPont de Nemours & Co.'s plant in Deepwater, N. J., June 27th. Flames and smoke spiraled high in the air until firemen doused blaze. . . . Four suits seeking $610,000 for personal injury and property damage allegedly suffered in an explosion and fire on June 10 at the drug plant of Wilson-Keith & Co., St. Louis, Mo., were filed June 20th in Circuit Court. Also named as defendants in the suits were the Universal Match Co., which was conducting an experiment at the plant in South St. Louis, and the Laclede Gas Co. . . . When Pasadena, Calif., tested its new air raid siren, the engineer of a fast train slammed on his brakes at a down-

town crossing. The new signal sounds like the air horn on a diesel locomotive. "I thought something had gone haywire and another train was coming 'round the bend" said the engineer (Thanks IRVING JOHNSON). . . . Did we mention the fact that the Elmira (N. Y.) Fire Department put out a minor blaze in the kitchen of the Mark Twain Hotel, that city, while about 300 kibitzers, attending the 27th annual conference of the Eastern Association of Fire Chiefs, offered advice and comments. . . . Oh yes, and while were talking about honey, and bees, and fire, there is the case of Clarence Santry, of Marysville, Calif., who tried to smoke out bees from a tree near his home. A scorched tree, and some bee-bitten firemen was the result, truly a "honey" of a time! . . . In Hankinson, N. D., angry citizens, blasted out of bed early one morning by insistent bleating of a diesel locomotive bull horn, discovered a $200,000 fire-raging through the business district. The engineer explained later that he spotted the fire as he started his run out of Hankinson and he kept sounding his air horn until he woke up the whole town to its danger. . . . In Chicago, firemen from Engine 4 noticed something was missing when they returned from a fire call early on a May morn'. It was the fire engine. Police found the apparatus at a curbside several blocks from the fire station with a man at the wheel. Nabbed, he said he took the shiny red truck on an impulse. He was "impulsed" to Henrotin Hospital for observation. (Thanks JACK KEARNS). . . . In New Jersey, Governor Robert B. Meyner has signed a bill into law permitting farmers to scare crows by exploding fire crackers in trees. New market for a fading fireworks industry? . . . In Chicago, Schultz, 3-months old mascot of Engine 44, went along with the gang to the fire at the Armour & Co. plant June 18th. Afterward, he couldn't be found. And he didn't make his way back to the firehouse at 3138 Lake. The Brothers had him pegged for AWOL. Seems the building that caught fire, housed equipment and stocks for making dog food. That mighta been the angle, pondered the Brothers. . . . It was so sunny in Atlanta, Ga., late in June that an unoccupied building on W. Peachtree st. caught fire. After extinguishing the minor blaze, firemen discovered it was caused by sun shining through a plate-glass window and igniting an old roll of camera film. . . . Speaking of heat, up in Standish, Me., a batch of eggs discarded at the town dump hatched 41 chicks in the hot sunshine. . . . Claims totaling $2,730,000 have been filed in the deaths of fourteen children and injuries to thirteen, in the Cheektowaga School fire March 31 last. No claim has been filed by the family of a fifteenth child who was fatally burned. . . . Police of Corning, N. Y., said they are investigating a series of telephone "false alarms" made to city officials in which an unidentified man threatened to "shoot firemen" if the city allowed a carnival sponsored by the Corning Fire Fighters Assn., to appear in that city. . . . Orchids to Reginald Griffin 19, of Los Angeles, Calif., who saved his 5-year-old sister when her nightgown caught fire from an electric heater, even though he is a paralytic. Griffin, a polio victim, paralyzed from the waist down, dragged himself from his bed and crawled after the girl, fleeing in terror. He caught her and beat out the fire.

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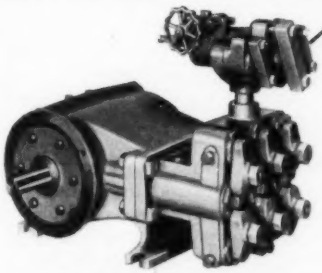

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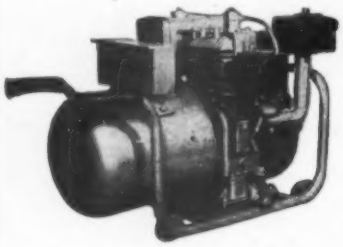

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The ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

MERITS OF SELF-CONTAINED BREATHING EQUIPMENT

THE discussion in this Round Table is a continuation of that which appeared in the July issue on the merits of self-contained breathing equipment.

The generous response from our readers made it necessary to carry the discussion over to this issue.

Readers are invited to send in their comments on this subject or on next month's subject which is described in a box on a subsequent page. Address replies to Round Table Editor, FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

Discussion of the Topic

L. L. Geisler, Chief, Johnson City, Tenn.: I am convinced from actual experience that the use of self-contained breathing equipment can reduce fire loss and help in life saving and rescue operations.

I have found that such equipment enables firemen to reach the seat of the fire sooner, thus reducing water and fire damage.

The men are more willing to go into buildings filled with smoke and fumes. I also find that training under as near as possible actual conditions builds confidence in the self-contained breathing equipment.

Donald White, Chief, Florence, Ala.: We find self-contained breathing equipment does help a great deal in fighting fires. Even though they are a little bothersome, they are a great help in locating the seat of fires. The men seem to be less reluctant in entering buildings with the masks on.

Frank L. Veasley, Chief, Cleveland Heights, Ohio: There is no question in my mind that diligent use of self-contained breathing equipment greatly facilitates fire fighting techniques. With such equipment, a better concentrated attack along with more positive control, will prevent a confined fire from spreading and increasing fire damage.

Time and time again it has been demonstrated that self-contained breathing equipment is the important factor in making it possible for the men to enter a burning and smoke-filled building and locate the seat of a fire.

Frankly, I feel the men attain a greater degree of confidence in themselves when entering a building involved in smoke and fire when they are wearing self-contained breathing equipment. Knowing in their own minds that they can work and operate more easily and comfortably with this equipment, they naturally will not hesitate in making their entry. This, plus the fact that protection is afforded against any type of gases which may be encountered.

A. McC. Marsh, Chief, Columbia, S. C.: From my experience and observation I am convinced that the use of self-contained breathing equipment can help reduce fire loss.

Such equipment helps to a considerable degree to locate the source of a fire, especially where one has been smoldering and has not yet broken out.

The men are less reluctant to enter burning buildings, for they know the equipment will keep them from becoming overcome by a lack of oxygen, gases and smoke.

William Stanley, Chief, Timmins, Ont.: I am firmly convinced from experience that fire losses are reduced as the result of using self-contained breathing equipment. This fact has been proven in many instances that the source of fire is found quicker by wearing such self-contained breathing equipment.

My men are much happier entering a smoky or fume-laden building wearing such equipment.

Leo R. Barry, Chief, Utica, N. Y.: It is my personal conviction that the use of self-contained breathing equipment can reduce fire loss.

Our experience has proved that the source of fire is sooner detected when men get in smoke and fume-laden buildings, wearing such equipment.

We find that our men are more willing to enter smoke and fume-laden buildings when they have the protection of self-contained breathing apparatus.

HERE ARE THE QUESTIONS

1. **From personal experience, or from observation, are you convinced that the use of self-contained breathing equipment can reduce fire loss?**
2. **Have you found that self-contained breathing equipment enables your men to locate the source of a fire quicker?**
3. **Do you find your men are less reluctant to enter smoky or fume-laden buildings when they can do so wearing self-contained breathing apparatus?**

However, it is necessary that men have training in the use of these masks and that they first gain confidence in the security they give. Most men unfamiliar with masks balk at wearing them to begin with and must learn their advantages before they become aware of their usefulness.

We find self-containing breathing equipment to be just about indispensable and carry such equipment on all apparatus.

C. L. Cox, Chief, Durham, N. C.: During my twenty-five years of experience and observation during fire fighting operations, I know that mask equipment has a definite purpose and use in every fire department. All of us realize that each and every small fire does not require the use of mask, but the ones that are real "smokies" are a different story. This is particularly true in basement fires where the only entrance is by way of an inside stairway. Decreased oxygen in such areas is always expected. Men well-trained in the use of mask equipment will not hesitate to enter such areas knowing that they have the difference between life and death in the self-contained units on their backs.

Self-contained breathing equipment is invaluable in rescue work. If conditions are severe enough to have caused an occupant partial or complete asphyxiation, it would be foolish for a fireman to enter the same conditions and expect to make a rescue and safe exit.

Consistent use of self-contained breathing equipment will enable men to locate the fire more quickly, extinguish same and decrease the fire and water damage.

Lester R. Schick, Davenport, Ia.: It has been our experience that self-contained breathing apparatus has a material effect upon the reduction of fire losses.

We have not only found that the source of the fire can be discovered more quickly, but lines can be gotten into play more quickly and water placed on the fire.

While continued practice and use of masks of any kind are necessary to instill confidence in the use of such equipment, we find our personnel less reluctant to enter fume-laden or smoky buildings than when using other types of masks. We make use of self-contained equipment on practically every fire of any consequence.

William Van Pfefferle, Chief, Camden, N. J.: We are convinced that the use of self-contained breathing equipment can reduce fire loss, for it enables the men to locate the source of a fire more quickly.

The first and most important requirement in the use of self-contained breathing apparatus is complete confidence in the unit in use. Unfortunately, from my experience and observation, some men are unable to acquire the necessary confidence regardless of the training in the construction, operation and use of the units at the fire training school and in actual experience in the smoke house with various types of smokes and gases.

These men upon graduating from the training course are apparently fully confident and competent to become an asset to any group entering a smoke-filled building, but upon ar-

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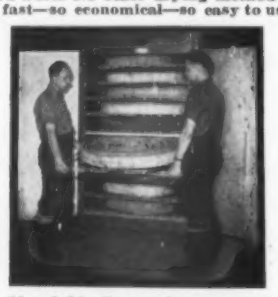

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riving on the fire grounds where the services of masks are required, these men are immediately noticeable by their nervous fumbling in donning the unit, reluctance to enter the building and almost constant watching of the timer or gauge after entering the building.

Men of this type should not be permitted to enter a building as a member of a masked group, as their nervousness and apprehension can quickly demoralize the entire group.

Herbert F. Travers, Chief, Worchester, Mass.: I believe the fire loss will be reduced through the use of self-contained breathing masks as an aid to better fire fighting operations. My personal experience has been that water lines can always be advanced to the interior of smoky buildings without undue delay providing excessive heat and flames are not a factor. This automatically means a quick stop with less water damage.

Through the use of self-contained masks, men can locate the source and heart of the fire more quickly. Water can be brought to this point. Further extension of the fire is prevented and it is extinguished before it can spread to serious proportions. This easily can be the difference between a small fire and a major one.

Firemen will very definitely enter smoke and fume-laden buildings more willingly when wearing self-contained masks.

Arthur Burch, Chief, St. Catharines, Ont.: We are convinced that the use of self-contained breathing equipment can reduce fire loss.

We could cite many instances where we have been able to get to the seat of the fire and extinguish the same with a relatively small loss, even though the entire building appeared to be doomed when we arrived at the scene.

Our experience is that since equipping apparatus with self-contained breathing equipment, the men will automatically don them and enter a heavily charged building where before there was hesitancy.

K. R. Putnam, Chief, Kitchener, Ont.: I am thoroughly convinced from past experience that the use of self-contained breathing equipment very definitely does reduce fire loss. This has proven itself in every day fire fighting operations, due to the fact that they enable the fire fighters to reach the seat of the fire in much less time, thereby controlling further spread of flame. In addition to this, rescue operations can be carried out more effectively and with greater efficiency.

Since this department standardized on the use of self-contained breathing equipment, the fire fighters work like eager beavers having the feeling of security and the knowledge that they are protected against smoke and fume-filled buildings.

I am a firm believer that two self-contained masks should be carried on every piece of fire apparatus.

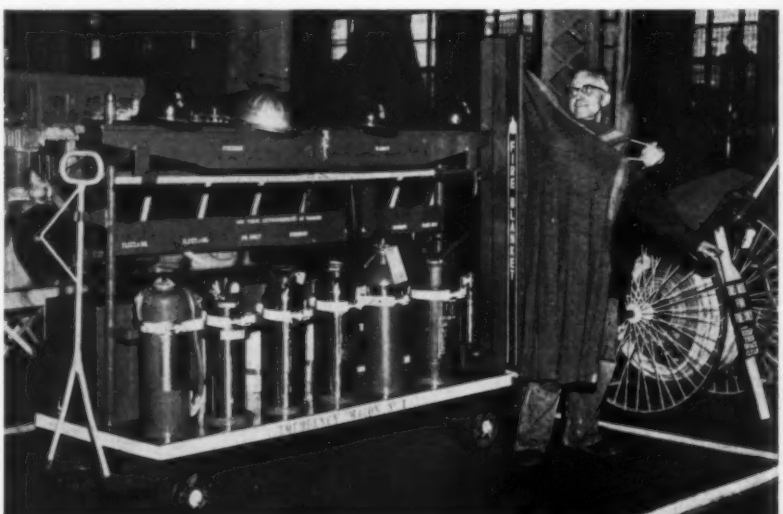
G. E. Huff, Chief, Brantford, Ont.: There is no doubt in my mind that the proper use of self-contained breathing equipment reduces fire loss. It is much quicker and easier for men wearing these masks to locate the source of the fire.

Men properly trained in the use of such equipment have far more confidence.

I believe that self-contained breathing equipment is a must in efficient modern fire fighting. We have at least two units on each of our vehicles.

J. C. Wilkerson, Chief, Augusta, Ga.: From personal experience, I am thoroughly convinced that self-contained breathing equipment is a must in a well-equipped up-to-date fire department. They will most certainly reduce fire loss.

Any time you have a ventilating problem and when seconds count, self-



Reading Railroad Workers Create Special Emergency "Wagon"

Railroad diesel shops present some particular kinds of fire hazards. Employes of the Locomotive shops of the Reading Railroad, at Reading, Pa., devised and built their own special emergency "wagon" to enable them to better cope with these emergencies.

Here's one view of the trailer "wagon" unit showing equipment in use. The unit is highly mobile; included in its kit are extinguishers of all kinds, gas masks, first aid kits, ladder, wire, rope, cutters, fire blanket, forcible entry tools, etc.

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Fig. 164AN
4½" swivel female x two 2½" male Gated Siamese. Quick opening, ¼ turn valves.

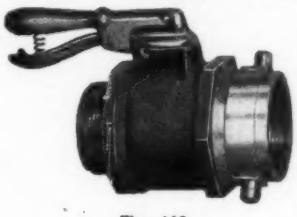

Fig. 163
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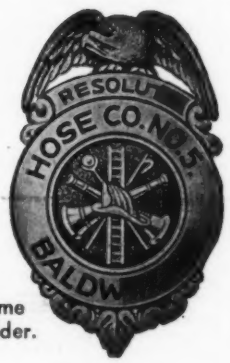

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contained breathing equipment means the difference not only in time saved but between a sloppy job with excessive water damage and a job well done.

Not only are the men less reluctant to enter a smoke or fume-laden building, but they go in with confidence with good self-contained breathing equipment. Most important, in my opinion, is their value in life saying, which, after all, is a fireman's first duty. We in Augusta would not be without them.

Dennis S. McCarthy, Assistant Chief, East Hartford, Conn.: From my personal experience, I am convinced that you can reduce fire loss considerably by the use of self-contained breathing equipment.

We find that it is much easier for the men to locate the source of the fire with such equipment, for the men will enter any smoke-filled building.

C. W. Wyrick, Chief, Greensboro, N. C.: We definitely believe that self-contained breathing apparatus is a must in any fire department. We have found through the past few years that they have been very instrumental in the reduction of fire losses. Our men have much confidence in the use of the breathing equipment.

In many and varied instances, we find that the source of the fire is readily found and prompt extinguishment is made. We give much of this credit to the self-contained breathing equipment.

Part of our training program involves drilling with our breathing apparatus. We have a manifold setup in our department to refill the cylinders of our Scott Air Paks and the cost to us to refill the cylinder is small. The men have gained confidence through these drills. We have a Scott for every man entering a smoke-filled building, and they use them religiously. We definitely find that the men enter smoky or fume-laden buildings quickly and do an efficient job while equipped with these masks.

Edward J. MacDonald, Chief, White Plains, N. Y.: We feel that the use of self-contained breathing equipment can reduce fire loss by effecting interior ventilation and stretching in to get at the seat of the fire, thereby making the area tenable for men to follow up without using masks.

We find that men are able to reach the seat of the fire more quickly especially in locations where there is no immediate means of effecting adequate ventilation, i. e., in cellars, machinery rooms, high office building rooms, hotel rooms, etc., beyond the reach of aerial ladders. These situations require some searching through hallways and staircases through which men could not travel without masks. In general, most men feel that they can work faster without masks and are willing to take a beating for a while in order to hasten operations. Officers are more confident, if they know second due companies are backing them up with men using masks and if they know relief to tired personnel is imminent.

William H. Mattocks, Chief, Saint Paul, Minn.: We are very certain that the use of self-contained breathing equipment can reduce fire loss. Men wearing such equipment are able to locate the source of the fire more quickly.

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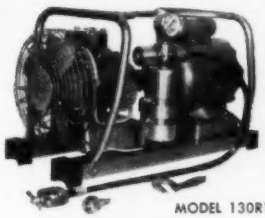

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William E. Dunlavy, Chief, Belleville, N. J.: From personal experience we believe that the use of self-contained breathing equipment can reduce fire loss, for they enable men to locate the source of the fire more quickly.

We have found that men are less reluctant to enter smoke or fume-laden buildings if they are equipped with such masks.

As a suggestion, the manufacturer should put some effort into the reduction in weight and cumbersomeness of self-contained breathing equipment. Any improvement which would tend to make it easier to don the equipment or make it lighter in weight and therefore easier to move around in while wearing it would be very advantageous.

Harry W. Marr, Acting Chief, Portland, Me.: From my experience I believe that the use of self-contained breathing equipment not only can, but does, reduce fire losses, where heavy smoke and gases are encountered.

In a building heavily charged with smoke, fumes or gases, penetration to inside of building would be very shallow. Nothing would be accomplished in the way of ventilation, extinguishing the fire or even finding the fire until too late, resulting in large fire loss. With self-contained breathing equipment, penetration into a building would be very deep, enabling the men to locate the fire quickly and extinguish it before it could do too much damage. The men would also be able to effect speedier ventilation.

I do not find the men reluctant about entering a building. They are a little reluctant sometimes about staying when the going gets rough. They hurry out, don breathing equipment and hurry back with a feeling of security.

Bernard J. Padgett, Chief, Alexandria, Va.: I find from experience that self-contained breathing equipment can help reduce fire losses, especially when a fire is located below ground level in basement and sub-basements where there is usually an oxygen deficiency.

Fires can be located faster and hose lines can be directed on the fire.

Our firemen are reluctant to enter smoke or fume-filled buildings without the proper equipment. They are trained not to enter below ground level without self-contained masks. However, when plenty of oxygen is present, usually above ground, all service gas masks answer the purpose.

Stephen P. Adley, Chief, Pittsburgh, Pa.: We use the Chemox (generating type canister) mask, and find that fire losses have been reduced by such use. Our men are able to locate the source of a fire more quickly with this equipment.

The attitude of the men towards these masks can be attested by the fact that they are worn quite extensively.

Earl R McDaniel, Chief, Lexington, Ky.: We are convinced that fire losses can be reduced through the use of self-contained breathing apparatus. Men are able to locate the source of the fire more quickly with this equipment.

I believe the men have to be educated to use breathing equipment.

Most people have a great fear of being housed up tight in a fire area. If given enough training in smoke-filled rooms with these masks, we find

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1½"x50'	Rubber covered water hose	.50 ft. cpld.
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Mechanical foam playpipes, Phomaire (Leading Manufacturer) (Cost $50.00 each)		9.50 ea.

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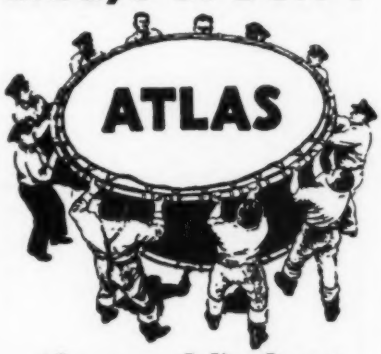

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27 WARREN ST., NEW YORK 7, N. Y.

HERE ARE THE QUESTIONS FOR THE NEXT ISSUE

1. What method do you believe the best for making promotions in a paid fire department?
   a. By recommendation of the Chief?
   b. By competitive examination—to get the best qualified men for officers?
2. Should the size of the department be considered in deciding the way in which promotions are to be made?

them going into places that they were afraid to enter before.

Romey L. Rudd, Chief, Fort Smith, Ark.: We have found that fire losses have been reduced through the use of self-contained breathing apparatus, for they enable men to locate the source of a fire more quickly.

In some instances it would be impossible for men to enter a smoke or fume-filled building without self-contained breathing equipment.

J. F. Finnegan, Chief, Richmond, Va.; George W. Scarlett, Chief, New Brittain, Conn.; O. E. Boggess, Chief, Charleston, W. Va.; G. W. Simon, Chief, Quincy, Ill.; Walter S. Blanton, Chief, Savannah, Ga., and George Engler, Chief, Rapid City, S. D., report that from their personal experiences or from observation, they are convinced that the use of self-contained breathing equipment can reduce fire loss; that their men have been able to locate the source of a fire more quickly, and that the men are less reluctant to enter smoky or fume-filled buildings when they can do so wearing self-contained breathing apparatus.

California Chiefs Form Fire Prevention Section

(*Continued from page 672*)

Sweeney, of Oakland, was selected as their first president. Cecil Morris, Chief Fire Inspector of San Mateo, was elected as vice-president and Cecil Showalter, Fire Prevention Inspector of Santa Rosa, was elected as secretary-treasurer.

Bruce Wiggins, Fire Marshal of Santa Clara County, was appointed Chairman of the By-Laws Committee to be assisted by Lieutenant Alfred Hanson, Fire Inspector of Berkeley and Vice-president Cecil Morris.

This is not an entirely new organization, but instead, a welding together, under the sponsorship of the Northern California Conference of Fire Chiefs presently headed by Gayle Coger, Chief of the Fresno Fire Department, of several local area groups having the same objectives.

The meeting included an address by Chief Jay Stevens of the National Board of Fire Underwriters on the potential of prevention inspections in homes, and an informal talk by Roi B. Woolley, Associate Editor of *Fire Engineering* at a luncheon held at the Berkeley Elks Club.

NEW!

GIANT CHROME FLASHER

FRONT AND REAR (Type FRF)

Powerful, pulsating, 60 second flashes of RUBY red visible for blocks. Nearly 8" in diameter yet light and easy to mount on its aluminum pedestal.

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- It will stand alone—on ice, snow, roofs, gravel or concrete—without any whip or back-lash.
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- It releases manpower for other duties.
- It's an excellent carrying device on a moving hose line—three men can move forward, with a charged line, open under pressure. With hose line attached and nozzle closed, one man can easily move it to another position.
- It's one of the greatest fire-fighting tools ever devised—of particular value to undermanned departments.

Shown in action with the Elkhart Hose Control is the Elkhart J-200 Mystery Nozzle—a fog nozzle capable of discharging up to 475 gallons per minute, set at 30° fog, with 125 pounds nozzle pressure. Its huge output provides an enormous blanket or wall of solid fog.

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FIRE ENGINEERING

AUGUST, 1954

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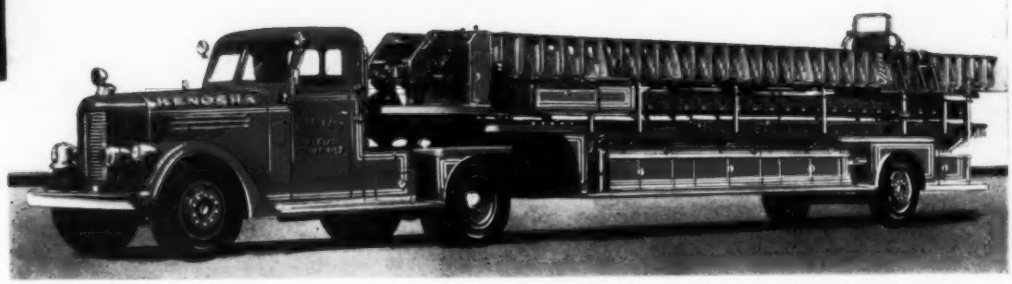

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The service record of the Pirsch Hydro-Mechanical Aerial, of 23 years or more, in fire departments throughout the Country will provide the answer to the question of reliability and dependability.

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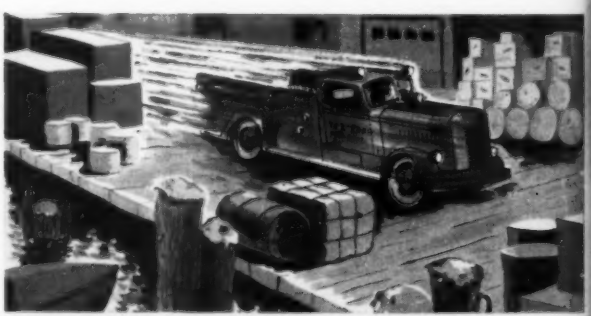

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